

There are 115 reactions and 58 species in the xEARM model.

The stoichiometric matrix is S , where

```
S[ 1,  1] = -1
S[ 1,  2] =  1
S[ 1,111] =  1
S[ 1,112] = -1
S[ 2,  1] = -1
S[ 2,  2] =  1
S[ 2, 71] =  1
S[ 2, 72] = -1
S[ 3,  1] =  1
S[ 3,  2] = -1
S[ 3,  3] = -1
S[ 4,  3] =  1
S[ 4,  4] = -1
S[ 4,  5] =  1
S[ 4,  6] = -1
S[ 4,  7] =  1
S[ 4,  8] =  1
S[ 5,  4] = -1
S[ 5,  5] =  1
S[ 5, 73] =  1
S[ 5, 74] = -1
S[ 6,  4] =  1
S[ 6,  5] = -1
S[ 6, 75] = -1
S[ 7,  6] = -1
S[ 7,  7] =  1
S[ 7, 17] = -1
S[ 7, 18] =  1
S[ 7, 76] =  1
S[ 7, 77] = -1
S[ 8,  6] =  1
S[ 8,  7] = -1
S[ 8,  8] = -1
S[ 9,  8] =  1
S[ 9,  9] = -1
S[ 9, 10] =  1
S[ 9, 11] = -1
S[ 9, 12] =  1
S[ 9, 13] =  1
S[ 9, 19] =  1
S[ 9, 26] = -1
S[ 9, 27] =  1
S[ 9, 28] =  1
S[10,  9] = -1
S[10, 10] =  1
S[10, 78] =  1
S[10, 79] = -1
S[11,  9] =  1
S[11, 10] = -1
S[11, 80] = -1
S[12, 11] = -1
S[12, 12] =  1
S[12, 62] = -1
S[12, 63] =  1
S[12,101] =  1
S[12,102] = -1
S[13, 11] =  1
S[13, 12] = -1
S[13, 13] = -1
S[14, 13] =  1
S[14, 14] = -1
S[14, 15] =  1
S[14, 16] =  1
```

```
S[14, 20] = -1
S[14, 21] = 1
S[14, 23] = -1
S[14, 24] = 1
S[14, 25] = 1
S[14, 64] = 1
S[15, 14] = -1
S[15, 15] = 1
S[15,104] = 1
S[15,105] = -1
S[16, 14] = 1
S[16, 15] = -1
S[16, 16] = -1
S[17, 16] = 1
S[17, 17] = -1
S[17, 18] = 1
S[17, 19] = 1
S[17,106] = -1
S[18, 17] = 1
S[18, 18] = -1
S[18, 19] = -1
S[19, 20] = -1
S[19, 21] = 1
S[19, 22] = 1
S[19, 67] = -1
S[19, 68] = 1
S[19, 69] = -1
S[19, 70] = 1
S[19, 95] = 1
S[19, 96] = -1
S[20, 20] = 1
S[20, 21] = -1
S[20, 22] = -1
S[21, 23] = -1
S[21, 24] = 1
S[21,108] = 1
S[21,109] = -1
S[22, 23] = 1
S[22, 24] = -1
S[22, 25] = -1
S[23, 25] = 1
S[23,110] = -1
S[24, 26] = -1
S[24, 27] = 1
S[24, 81] = 1
S[24, 82] = -1
S[25, 26] = 1
S[25, 27] = -1
S[25, 28] = -1
S[26, 28] = 1
S[26, 29] = -1
S[26, 30] = 1
S[26, 31] = -1
S[26, 32] = 1
S[26, 33] = 1
S[27, 29] = -1
S[27, 30] = 1
S[27, 83] = 1
S[27, 84] = -1
S[28, 29] = 1
S[28, 30] = -1
S[28, 85] = -1
S[29, 31] = -1
S[29, 32] = 1
S[29, 86] = 1
S[29, 87] = -1
S[30, 31] = 1
S[30, 32] = -1
```

```
S[30, 33] = -1
S[31, 33] = 1
S[31, 34] = -1
S[31, 35] = 1
S[32, 34] = 1
S[32, 35] = -1
S[32, 36] = -1
S[32, 37] = 1
S[32, 38] = -2
S[32, 39] = 2
S[33, 36] = -1
S[33, 37] = 1
S[33, 40] = -1
S[33, 41] = 1
S[33, 44] = -1
S[33, 45] = 1
S[33, 88] = 1
S[33, 89] = -1
S[34, 36] = 1
S[34, 37] = -1
S[34, 90] = -1
S[35, 38] = 1
S[35, 39] = -1
S[35, 40] = -1
S[35, 41] = 1
S[35, 42] = -2
S[35, 43] = 2
S[36, 40] = 1
S[36, 41] = -1
S[36, 91] = -1
S[37, 42] = 1
S[37, 43] = -1
S[37, 44] = -1
S[37, 45] = 1
S[37, 46] = -1
S[37, 47] = 1
S[38, 44] = 1
S[38, 45] = -1
S[38, 92] = -1
S[39, 46] = -1
S[39, 47] = 1
S[39, 93] = 1
S[40, 46] = 1
S[40, 47] = -1
S[40, 48] = -1
S[41, 48] = 1
S[41, 49] = -1
S[41, 50] = 1
S[41, 51] = 1
S[41, 52] = -1
S[41, 53] = 1
S[41, 54] = 1
S[41, 93] = -1
S[42, 49] = -1
S[42, 50] = 1
S[42, 113] = 1
S[42, 114] = -1
S[43, 49] = 1
S[43, 50] = -1
S[43, 51] = -1
S[44, 51] = 1
S[44, 55] = -1
S[44, 56] = 1
S[45, 52] = -1
S[45, 53] = 1
S[45, 97] = 1
S[45, 98] = -1
S[46, 52] = 1
```

```

S[46, 53] = -1
S[46, 54] = -1
S[47, 54] = 1
S[47, 65] = -1
S[47, 66] = 1
S[48, 55] = 1
S[48, 56] = -1
S[48, 57] = 1
S[48, 58] = -1
S[48, 59] = 1
S[48,115] = -1
S[49, 58] = -1
S[49, 59] = 1
S[49, 94] = 1
S[50, 57] = -1
S[50, 58] = 1
S[50, 59] = -1
S[51, 57] = 1
S[51, 60] = -1
S[51, 61] = 1
S[51, 94] = -1
S[52, 60] = -1
S[52, 61] = 1
S[53, 60] = 1
S[53, 61] = -1
S[53, 62] = -1
S[53, 63] = 1
S[53, 64] = 1
S[53, 67] = -1
S[53, 68] = 1
S[53,107] = 1
S[54, 62] = 1
S[54, 63] = -1
S[54, 64] = -1
S[55, 65] = 1
S[55, 66] = -1
S[55, 69] = -1
S[55, 70] = 1
S[55, 99] = -1
S[56, 67] = 1
S[56, 68] = -1
S[56,107] = -1
S[57, 69] = 1
S[57, 70] = -1
S[57,100] = -1
S[58, 22] = 1
S[58,103] = -1

```

And all other elements in S are zero.

The vector of reaction velocities is v, where

```

v[ 1] = k1*x1*x2
v[ 2] = k2*x3
v[ 3] = k3*x3
v[ 4] = k4*x4*x5
v[ 5] = k5*x6
v[ 6] = k6*x4*x7
v[ 7] = k7*x8
v[ 8] = k8*x8
v[ 9] = k9*x9*x10
v[10] = k10*x11
v[11] = k11*x9*x12
v[12] = k12*x13
v[13] = k13*x13
v[14] = k14*x14*x15
v[15] = k15*x16
v[16] = k16*x16

```

```
v[ 17] = k17*x7*x17
v[ 18] = k18*x18
v[ 19] = k19*x18
v[ 20] = k20*x14*x19
v[ 21] = k21*x20
v[ 22] = k22*x20
v[ 23] = k23*x14*x21
v[ 24] = k24*x22
v[ 25] = k25*x22
v[ 26] = k26*x9*x24
v[ 27] = k27*x25
v[ 28] = k28*x25
v[ 29] = k29*x26*x27
v[ 30] = k30*x28
v[ 31] = k31*x26*x29
v[ 32] = k32*x30
v[ 33] = k33*x30
v[ 34] = k34*x31
v[ 35] = k35*x32
v[ 36] = k36*c1*x32*x33
v[ 37] = k37*x34
v[ 38] = k38*c1*x32^2
v[ 39] = k39*x35
v[ 40] = k40*c1*x33*x35
v[ 41] = k41*x36
v[ 42] = k42*c1*x35^2
v[ 43] = k43*x37
v[ 44] = k44*c1*x33*x37
v[ 45] = k45*x38
v[ 46] = k46*c1*x39*x37
v[ 47] = k47*x40
v[ 48] = k48*x40
v[ 49] = k49*c1*x41*x42
v[ 50] = k50*x43
v[ 51] = k51*x43
v[ 52] = k52*c1*x41*x45
v[ 53] = k53*x46
v[ 54] = k54*x46
v[ 55] = k55*x44
v[ 56] = k56*x48
v[ 57] = k57*x50
v[ 58] = k58*x48*x49
v[ 59] = k59*x50
v[ 60] = k60*x51*x52
v[ 61] = k61*x53
v[ 62] = k62*x12*x53
v[ 63] = k63*x54
v[ 64] = k64*x54
v[ 65] = k65*x47
v[ 66] = k66*x55
v[ 67] = k67*x19*x53
v[ 68] = k68*x56
v[ 69] = k69*x19*x55
v[ 70] = k70*x57
v[ 71] = k71
v[ 72] = k72*x2
v[ 73] = k73
v[ 74] = k74*x5
v[ 75] = k75*x6
v[ 76] = k76
v[ 77] = k77*x7
v[ 78] = k78
v[ 79] = k79*x10
v[ 80] = k80*x11
v[ 81] = k81
v[ 82] = k82*x24
v[ 83] = k83
v[ 84] = k84*x27
```

```

v[ 85] = k85*x28
v[ 86] = k86
v[ 87] = k87*x29
v[ 88] = k88
v[ 89] = k89*x33
v[ 90] = k90*x34
v[ 91] = k91*x36
v[ 92] = k92*x38
v[ 93] = k93*x41
v[ 94] = k94*x51
v[ 95] = k95
v[ 96] = k96*x19
v[ 97] = k97
v[ 98] = k98*x45
v[ 99] = k99*x55
v[100] = k100*x57
v[101] = k101
v[102] = k102*x12
v[103] = k103*x58
v[104] = k104
v[105] = k105*x15
v[106] = k106*x17
v[107] = k107*x56
v[108] = k108
v[109] = k109*x21
v[110] = k110*x23
v[111] = k111
v[112] = k112*x1
v[113] = k113
v[114] = k114*x42
v[115] = k115*x48

```

The vector of mass balance equations is $\dot{x} = S \cdot v$, where

```

xdot[ 1] = k2*x3 - k112*x1 - k1*x1*x2 + k111
xdot[ 2] = k2*x3 - k72*x2 - k1*x1*x2 + k71
xdot[ 3] = -k2*x3 - k3*x3 + k1*x1*x2
xdot[ 4] = k3*x3 + k5*x6 + k7*x8 + k8*x8 - k4*x4*x5 - k6*x4*x7
xdot[ 5] = k5*x6 - k74*x5 - k4*x4*x5 + k73
xdot[ 6] = -k5*x6 - k75*x6 + k4*x4*x5
xdot[ 7] = k7*x8 + k18*x18 - k77*x7 - k6*x4*x7 - k17*x7*x17 + k76
xdot[ 8] = -k7*x8 - k8*x8 + k6*x4*x7
xdot[ 9] = k8*x8 + k10*x11 + k12*x13 + k13*x13 + k19*x18 + k27*x25 + k28*x25
          - k9*x9*x10 - k11*x9*x12 - k26*x9*x24
xdot[10] = k10*x11 - k79*x10 - k9*x9*x10 + k78
xdot[11] = -k10*x11 - k80*x11 + k9*x9*x10
xdot[12] = k12*x13 + k63*x54 - k102*x12 - k11*x9*x12 - k62*x12*x53 + k101
xdot[13] = -k12*x13 - k13*x13 + k11*x9*x12
xdot[14] = k13*x13 + k15*x16 + k16*x16 + k21*x20 + k24*x22 + k25*x22 + k64*x
          54 - k14*x14*x15 - k20*x14*x19 - k23*x14*x21
xdot[15] = k15*x16 - k105*x15 - k14*x14*x15 + k104
xdot[16] = -k15*x16 - k16*x16 + k14*x14*x15

```

```

xdot[17] = k16*x16 + k18*x18 + k19*x18 - k106*x17 - k17*x7*x17
xdot[18] = -k18*x18 - k19*x18 + k17*x7*x17
xdot[19] = k21*x20 + k22*x20 + k68*x56 + k70*x57 - k96*x19 - k20*x14*x19 - k
67*x19*x53 - k69*x19*x55 + k95
xdot[20] = -k21*x20 - k22*x20 + k20*x14*x19
xdot[21] = k24*x22 - k109*x21 - k23*x14*x21 + k108
xdot[22] = -k24*x22 - k25*x22 + k23*x14*x21
xdot[23] = k25*x22 - k110*x23
xdot[24] = k27*x25 - k82*x24 - k26*x9*x24 + k81
xdot[25] = -k27*x25 - k28*x25 + k26*x9*x24
xdot[26] = k28*x25 + k30*x28 + k32*x30 + k33*x30 - k29*x26*x27 - k31*x26*x29
xdot[27] = k30*x28 - k84*x27 - k29*x26*x27 + k83
xdot[28] = -k30*x28 - k85*x28 + k29*x26*x27
xdot[29] = k32*x30 - k87*x29 - k31*x26*x29 + k86
xdot[30] = -k32*x30 - k33*x30 + k31*x26*x29
xdot[31] = k33*x30 - k34*x31 + k35*x32
xdot[32] = -k36*c1*x32*x33 + k34*x31 - k35*x32 + k37*x34 + 2*k39*x35 - 2*k38
*c1*x32^2
xdot[33] = -k36*c1*x32*x33 - k40*c1*x33*x35 - k44*c1*x33*x37 + k37*x34 + k41
*x36 + k45*x38 - k89*x33 + k88
xdot[34] = k36*c1*x32*x33 - k37*x34 - k90*x34
xdot[35] = -k40*c1*x33*x35 - k39*x35 + k41*x36 + 2*k43*x37 + k38*c1*x32^2-2*
k42*c1*x35^2
xdot[36] = k40*c1*x33*x35 - k41*x36 - k91*x36
xdot[37] = -k44*c1*x33*x37 - k46*c1*x39*x37 - k43*x37 + k45*x38 + k47*x40 +
k42*c1*x35^2
xdot[38] = k44*c1*x33*x37 - k45*x38 - k92*x38
xdot[39] = -k46*c1*x39*x37 + k47*x40 + k93*x41
xdot[40] = k46*c1*x39*x37 - k47*x40 - k48*x40
xdot[41] = -k49*c1*x41*x42 - k52*c1*x41*x45 + k48*x40 + k50*x43 + k51*x43 +
k53*x46 + k54*x46 - k93*x41
xdot[42] = -k49*c1*x41*x42 + k50*x43 - k114*x42 + k113
xdot[43] = k49*c1*x41*x42 - k50*x43 - k51*x43
xdot[44] = k51*x43 - k55*x44 + k56*x48
xdot[45] = -k52*c1*x41*x45 + k53*x46 - k98*x45 + k97
xdot[46] = k52*c1*x41*x45 - k53*x46 - k54*x46
xdot[47] = k54*x46 - k65*x47 + k66*x55

```

```

xdot[48] = k55*x44 - k56*x48 + k57*x50 + k59*x50 - k115*x48 - k58*x48*x49
xdot[49] = k59*x50 + k94*x51 - k58*x48*x49
xdot[50] = -k57*x50 - k59*x50 + k58*x48*x49
xdot[51] = k57*x50 + k61*x53 - k94*x51 - k60*x51*x52
xdot[52] = k61*x53 - k60*x51*x52
xdot[53] = -k61*x53 + k63*x54 + k64*x54 + k68*x56 + k107*x56 + k60*x51*x52 -
          k62*x12*x53 - k67*x19*x53
xdot[54] = -k63*x54 - k64*x54 + k62*x12*x53
xdot[55] = k65*x47 - k66*x55 + k70*x57 - k99*x55 - k69*x19*x55
xdot[56] = -k68*x56 - k107*x56 + k67*x19*x53
xdot[57] = -k70*x57 - k100*x57 + k69*x19*x55
xdot[58] = k22*x20 - k103*x58

```

To solve for $\dot{x}=0$, we will introduce the following pseudospecies:

```

x[59] = x[32]^2
x[60] = x[35]^2

```

This gives a new reaction velocity vector v , where

```

v[1] = k38*c1*x59
v[2] = k42*c1*x60

```

Let the map ψ_p be given by

```

k1    |--> p1
k2    |--> p2
k3    |--> p3
k4    |--> p4
k5    |--> p5
k6    |--> p6
k7    |--> p7
k8    |--> p8
k9    |--> p9
k10   |--> p10
k11   |--> p11
k12   |--> p12
k13   |--> p13
k14   |--> p14
k15   |--> p15
k16   |--> p16
k17   |--> p17
k18   |--> p18
k19   |--> p19
k20   |--> p20
k21   |--> p21
k22   |--> p22
k23   |--> p23
k24   |--> p24
k25   |--> p25
k26   |--> p26
k27   |--> p27
k28   |--> p28
k29   |--> p29
k30   |--> p30

```


| | | |
|-----|-----|-----|
| k31 | --> | p31 |
| k32 | --> | p32 |
| k33 | --> | p33 |
| k34 | --> | p34 |
| k35 | --> | p35 |
| k36 | --> | p36 |
| k37 | --> | p37 |
| k38 | --> | p38 |
| k39 | --> | p39 |
| k40 | --> | p40 |
| k41 | --> | p41 |
| k42 | --> | p42 |
| k43 | --> | p43 |
| k44 | --> | p44 |
| k45 | --> | p45 |
| k46 | --> | p46 |
| k47 | --> | p47 |
| k48 | --> | p48 |
| k49 | --> | p49 |
| k50 | --> | p50 |
| k51 | --> | p51 |
| k52 | --> | p52 |
| k53 | --> | p53 |
| k54 | --> | p54 |
| k55 | --> | p55 |
| k56 | --> | p56 |
| k57 | --> | p57 |
| k58 | --> | p58 |
| k59 | --> | p59 |
| k60 | --> | p60 |
| k61 | --> | p61 |
| k62 | --> | p62 |
| k63 | --> | p63 |
| k64 | --> | p64 |
| k65 | --> | p65 |
| k66 | --> | p66 |
| k67 | --> | p67 |
| k68 | --> | p68 |
| k69 | --> | p69 |
| k70 | --> | p70 |
| k71 | --> | y44 |
| k72 | --> | y45 |
| k73 | --> | y46 |
| k74 | --> | y47 |
| k75 | --> | p71 |
| k76 | --> | y48 |
| k77 | --> | y49 |
| k78 | --> | y50 |
| k79 | --> | y51 |
| k80 | --> | p72 |
| k81 | --> | y52 |
| k82 | --> | y53 |
| k83 | --> | y54 |
| k84 | --> | y55 |
| k85 | --> | p73 |
| k86 | --> | y56 |
| k87 | --> | y57 |
| k88 | --> | y58 |
| k89 | --> | y59 |
| k90 | --> | p74 |
| k91 | --> | p75 |
| k92 | --> | p76 |
| k93 | --> | p77 |
| k94 | --> | p78 |
| k95 | --> | y60 |
| k96 | --> | y61 |
| k97 | --> | y62 |
| k98 | --> | y63 |

| | | |
|------|-----|------|
| k99 | --> | p79 |
| k100 | --> | p80 |
| k101 | --> | y64 |
| k102 | --> | y65 |
| k103 | --> | p81 |
| k104 | --> | y66 |
| k105 | --> | y67 |
| k106 | --> | p82 |
| k107 | --> | p83 |
| k108 | --> | y68 |
| k109 | --> | y69 |
| k110 | --> | p84 |
| k111 | --> | y70 |
| k112 | --> | p85 |
| k113 | --> | y71 |
| k114 | --> | y72 |
| k115 | --> | p86 |
| x1 | --> | y1 |
| x2 | --> | p87 |
| x3 | --> | y2 |
| x4 | --> | y3 |
| x5 | --> | p88 |
| x6 | --> | y4 |
| x7 | --> | p89 |
| x8 | --> | y5 |
| x9 | --> | y6 |
| x10 | --> | p90 |
| x11 | --> | y7 |
| x12 | --> | p91 |
| x13 | --> | y8 |
| x14 | --> | y9 |
| x15 | --> | p92 |
| x16 | --> | y10 |
| x17 | --> | y11 |
| x18 | --> | y12 |
| x19 | --> | p93 |
| x20 | --> | y13 |
| x21 | --> | p94 |
| x22 | --> | y14 |
| x23 | --> | y15 |
| x24 | --> | p95 |
| x25 | --> | y16 |
| x26 | --> | y17 |
| x27 | --> | p96 |
| x28 | --> | y18 |
| x29 | --> | p97 |
| x30 | --> | y19 |
| x31 | --> | y20 |
| x32 | --> | y21 |
| x33 | --> | p98 |
| x34 | --> | y22 |
| x35 | --> | y23 |
| x36 | --> | y24 |
| x37 | --> | y25 |
| x38 | --> | y26 |
| x39 | --> | p99 |
| x40 | --> | y27 |
| x41 | --> | y28 |
| x42 | --> | p100 |
| x43 | --> | y29 |
| x44 | --> | y30 |
| x45 | --> | p101 |
| x46 | --> | y31 |
| x47 | --> | y32 |
| x48 | --> | y33 |
| x49 | --> | p102 |
| x50 | --> | y34 |
| x51 | --> | y35 |

```

x52  |-->  p103
x53  |-->  y36
x54  |-->  y37
x55  |-->  y38
x56  |-->  y39
x57  |-->  y40
x58  |-->  y41
x59  |-->  y42
x60  |-->  y43
c1   |-->  p104

```

This results in a linear velocity vector $\text{psi_p}[v]$, where

```

psi_p[v[ 1]] = p1*y1*p87
psi_p[v[ 2]] = p2*y2
psi_p[v[ 3]] = p3*y2
psi_p[v[ 4]] = p4*y3*p88
psi_p[v[ 5]] = p5*y4
psi_p[v[ 6]] = p6*y3*p89
psi_p[v[ 7]] = p7*y5
psi_p[v[ 8]] = p8*y5
psi_p[v[ 9]] = p9*y6*p90
psi_p[v[10]] = p10*y7
psi_p[v[11]] = p11*y6*p91
psi_p[v[12]] = p12*y8
psi_p[v[13]] = p13*y8
psi_p[v[14]] = p14*y9*p92
psi_p[v[15]] = p15*y10
psi_p[v[16]] = p16*y10
psi_p[v[17]] = p17*p89*y11
psi_p[v[18]] = p18*y12
psi_p[v[19]] = p19*y12
psi_p[v[20]] = p20*y9*p93
psi_p[v[21]] = p21*y13
psi_p[v[22]] = p22*y13
psi_p[v[23]] = p23*y9*p94
psi_p[v[24]] = p24*y14
psi_p[v[25]] = p25*y14
psi_p[v[26]] = p26*y6*p95
psi_p[v[27]] = p27*y16
psi_p[v[28]] = p28*y16
psi_p[v[29]] = p29*y17*p96
psi_p[v[30]] = p30*y18
psi_p[v[31]] = p31*y17*p97
psi_p[v[32]] = p32*y19
psi_p[v[33]] = p33*y19
psi_p[v[34]] = p34*y20
psi_p[v[35]] = p35*y21
psi_p[v[36]] = p36*p104*y21*p98
psi_p[v[37]] = p37*y22
psi_p[v[38]] = k38*c1*y42
psi_p[v[39]] = p39*y23
psi_p[v[40]] = p40*p104*p98*y23
psi_p[v[41]] = p41*y24
psi_p[v[42]] = k42*c1*y43
psi_p[v[43]] = p43*y25
psi_p[v[44]] = p44*p104*p98*y25
psi_p[v[45]] = p45*y26
psi_p[v[46]] = p46*p104*p99*y25
psi_p[v[47]] = p47*y27
psi_p[v[48]] = p48*y27
psi_p[v[49]] = p49*p104*y28*p100
psi_p[v[50]] = p50*y29
psi_p[v[51]] = p51*y29
psi_p[v[52]] = p52*p104*y28*p101
psi_p[v[53]] = p53*y31
psi_p[v[54]] = p54*y31
psi_p[v[55]] = p55*y30

```

```

psi_p[v[ 56]] = p56*y33
psi_p[v[ 57]] = p57*y34
psi_p[v[ 58]] = p58*y33*p102
psi_p[v[ 59]] = p59*y34
psi_p[v[ 60]] = p60*y35*p103
psi_p[v[ 61]] = p61*y36
psi_p[v[ 62]] = p62*p91*y36
psi_p[v[ 63]] = p63*y37
psi_p[v[ 64]] = p64*y37
psi_p[v[ 65]] = p65*y32
psi_p[v[ 66]] = p66*y38
psi_p[v[ 67]] = p67*p93*y36
psi_p[v[ 68]] = p68*y39
psi_p[v[ 69]] = p69*p93*y38
psi_p[v[ 70]] = p70*y40
psi_p[v[ 71]] = y44
psi_p[v[ 72]] = y45*p87
psi_p[v[ 73]] = y46
psi_p[v[ 74]] = y47*p88
psi_p[v[ 75]] = p71*y4
psi_p[v[ 76]] = y48
psi_p[v[ 77]] = y49*p89
psi_p[v[ 78]] = y50
psi_p[v[ 79]] = y51*p90
psi_p[v[ 80]] = p72*y7
psi_p[v[ 81]] = y52
psi_p[v[ 82]] = y53*p95
psi_p[v[ 83]] = y54
psi_p[v[ 84]] = y55*p96
psi_p[v[ 85]] = p73*y18
psi_p[v[ 86]] = y56
psi_p[v[ 87]] = y57*p97
psi_p[v[ 88]] = y58
psi_p[v[ 89]] = y59*p98
psi_p[v[ 90]] = p74*y22
psi_p[v[ 91]] = p75*y24
psi_p[v[ 92]] = p76*y26
psi_p[v[ 93]] = p77*y28
psi_p[v[ 94]] = p78*y35
psi_p[v[ 95]] = y60
psi_p[v[ 96]] = y61*p93
psi_p[v[ 97]] = y62
psi_p[v[ 98]] = y63*p101
psi_p[v[ 99]] = p79*y38
psi_p[v[100]] = p80*y40
psi_p[v[101]] = y64
psi_p[v[102]] = y65*p91
psi_p[v[103]] = p81*y41
psi_p[v[104]] = y66
psi_p[v[105]] = y67*p92
psi_p[v[106]] = p82*y11
psi_p[v[107]] = p83*y39
psi_p[v[108]] = y68
psi_p[v[109]] = y69*p94
psi_p[v[110]] = p84*y15
psi_p[v[111]] = y70
psi_p[v[112]] = p85*y1
psi_p[v[113]] = y71
psi_p[v[114]] = y72*p100
psi_p[v[115]] = p86*y33

```

We can express $\text{psi_p}[v]$ as the product $P*y$, where y is the vector $[y_1, \dots, y_{72}]^T$ and $P =$

```

P[ 1, 1] = p1*p87
P[ 2, 2] = p2
P[ 3, 2] = p3
P[ 4, 3] = p4*p88

```

```
P[ 5, 4] = p5
P[ 6, 3] = p6*p89
P[ 7, 5] = p7
P[ 8, 5] = p8
P[ 9, 6] = p9*p90
P[10, 7] = p10
P[11, 6] = p11*p91
P[12, 8] = p12
P[13, 8] = p13
P[14, 9] = p14*p92
P[15,10] = p15
P[16,10] = p16
P[17,11] = p17*p89
P[18,12] = p18
P[19,12] = p19
P[20, 9] = p20*p93
P[21,13] = p21
P[22,13] = p22
P[23, 9] = p23*p94
P[24,14] = p24
P[25,14] = p25
P[26, 6] = p26*p95
P[27,16] = p27
P[28,16] = p28
P[29,17] = p29*p96
P[30,18] = p30
P[31,17] = p31*p97
P[32,19] = p32
P[33,19] = p33
P[34,20] = p34
P[35,21] = p35
P[36,21] = p36*p104*p98
P[37,22] = p37
P[38,42] = k38*c1
P[39,23] = p39
P[40,23] = p40*p104*p98
P[41,24] = p41
P[42,43] = k42*c1
P[43,25] = p43
P[44,25] = p44*p104*p98
P[45,26] = p45
P[46,25] = p46*p104*p99
P[47,27] = p47
P[48,27] = p48
P[49,28] = p49*p104*p100
P[50,29] = p50
P[51,29] = p51
P[52,28] = p52*p104*p101
P[53,31] = p53
P[54,31] = p54
P[55,30] = p55
P[56,33] = p56
P[57,34] = p57
P[58,33] = p58*p102
P[59,34] = p59
P[60,35] = p60*p103
P[61,36] = p61
P[62,36] = p62*p91
P[63,37] = p63
P[64,37] = p64
P[65,32] = p65
P[66,38] = p66
P[67,36] = p67*p93
P[68,39] = p68
P[69,38] = p69*p93
P[70,40] = p70
P[71,44] = 1
P[72,45] = p87
```

```

P[ 73,46] = 1
P[ 74,47] = p88
P[ 75, 4] = p71
P[ 76,48] = 1
P[ 77,49] = p89
P[ 78,50] = 1
P[ 79,51] = p90
P[ 80, 7] = p72
P[ 81,52] = 1
P[ 82,53] = p95
P[ 83,54] = 1
P[ 84,55] = p96
P[ 85,18] = p73
P[ 86,56] = 1
P[ 87,57] = p97
P[ 88,58] = 1
P[ 89,59] = p98
P[ 90,22] = p74
P[ 91,24] = p75
P[ 92,26] = p76
P[ 93,28] = p77
P[ 94,35] = p78
P[ 95,60] = 1
P[ 96,61] = p93
P[ 97,62] = 1
P[ 98,63] = p101
P[ 99,38] = p79
P[100,40] = p80
P[101,64] = 1
P[102,65] = p91
P[103,41] = p81
P[104,66] = 1
P[105,67] = p92
P[106,11] = p82
P[107,39] = p83
P[108,68] = 1
P[109,69] = p94
P[110,15] = p84
P[111,70] = 1
P[112, 1] = p85
P[113,71] = 1
P[114,72] = p100
P[115,33] = p86

```

And all other elements in P are zero.

From this we calculate the coefficient matrix, $C = S \cdot P =$

```

C[ 1, 1] = -p85 - p1*p87
C[ 1, 2] = p2
C[ 1,70] = 1
C[ 2, 1] = -p1*p87
C[ 2, 2] = p2
C[ 2,44] = 1
C[ 2,45] = -p87
C[ 3, 1] = p1*p87
C[ 3, 2] = -p2 - p3
C[ 4, 2] = p3
C[ 4, 3] = -p4*p88 - p6*p89
C[ 4, 4] = p5
C[ 4, 5] = p7 + p8
C[ 5, 3] = -p4*p88
C[ 5, 4] = p5
C[ 5,46] = 1
C[ 5,47] = -p88
C[ 6, 3] = p4*p88
C[ 6, 4] = -p5 - p71
C[ 7, 3] = -p6*p89

```

```

C[ 7, 5] = p7
C[ 7,11] = -p17*p89
C[ 7,12] = p18
C[ 7,48] = 1
C[ 7,49] = -p89
C[ 8, 3] = p6*p89
C[ 8, 5] = -p7 - p8
C[ 9, 5] = p8
C[ 9, 6] = -p9*p90 - p11*p91 - p26*p95
C[ 9, 7] = p10
C[ 9, 8] = p12 + p13
C[ 9,12] = p19
C[ 9,16] = p27 + p28
C[10, 6] = -p9*p90
C[10, 7] = p10
C[10,50] = 1
C[10,51] = -p90
C[11, 6] = p9*p90
C[11, 7] = -p10 - p72
C[12, 6] = -p11*p91
C[12, 8] = p12
C[12,36] = -p62*p91
C[12,37] = p63
C[12,64] = 1
C[12,65] = -p91
C[13, 6] = p11*p91
C[13, 8] = -p12 - p13
C[14, 8] = p13
C[14, 9] = -p14*p92 - p20*p93 - p23*p94
C[14,10] = p15 + p16
C[14,13] = p21
C[14,14] = p24 + p25
C[14,37] = p64
C[15, 9] = -p14*p92
C[15,10] = p15
C[15,66] = 1
C[15,67] = -p92
C[16, 9] = p14*p92
C[16,10] = -p15 - p16
C[17,10] = p16
C[17,11] = -p82 - p17*p89
C[17,12] = p18 + p19
C[18,11] = p17*p89
C[18,12] = -p18 - p19
C[19, 9] = -p20*p93
C[19,13] = p21 + p22
C[19,36] = -p67*p93
C[19,38] = -p69*p93
C[19,39] = p68
C[19,40] = p70
C[19,60] = 1
C[19,61] = -p93
C[20, 9] = p20*p93
C[20,13] = -p21 - p22
C[21, 9] = -p23*p94
C[21,14] = p24
C[21,68] = 1
C[21,69] = -p94
C[22, 9] = p23*p94
C[22,14] = -p24 - p25
C[23,14] = p25
C[23,15] = -p84
C[24, 6] = -p26*p95
C[24,16] = p27
C[24,52] = 1
C[24,53] = -p95
C[25, 6] = p26*p95
C[25,16] = -p27 - p28

```

```

C[26,16] = p28
C[26,17] = -p29*p96 - p31*p97
C[26,18] = p30
C[26,19] = p32 + p33
C[27,17] = -p29*p96
C[27,18] = p30
C[27,54] = 1
C[27,55] = -p96
C[28,17] = p29*p96
C[28,18] = -p30 - p73
C[29,17] = -p31*p97
C[29,19] = p32
C[29,56] = 1
C[29,57] = -p97
C[30,17] = p31*p97
C[30,19] = -p32 - p33
C[31,19] = p33
C[31,20] = -p34
C[31,21] = p35
C[32,20] = p34
C[32,21] = -p35 - p36*p104*p98
C[32,22] = p37
C[32,23] = 2*p39
C[32,42] = -2*k38*c1
C[33,21] = -p36*p104*p98
C[33,22] = p37
C[33,23] = -p40*p104*p98
C[33,24] = p41
C[33,25] = -p44*p104*p98
C[33,26] = p45
C[33,58] = 1
C[33,59] = -p98
C[34,21] = p36*p104*p98
C[34,22] = -p37 - p74
C[35,23] = -p39 - p40*p104*p98
C[35,24] = p41
C[35,25] = 2*p43
C[35,42] = k38*c1
C[35,43] = -2*k42*c1
C[36,23] = p40*p104*p98
C[36,24] = -p41 - p75
C[37,25] = -p43 - p44*p104*p98 - p46*p104*p99
C[37,26] = p45
C[37,27] = p47
C[37,43] = k42*c1
C[38,25] = p44*p104*p98
C[38,26] = -p45 - p76
C[39,25] = -p46*p104*p99
C[39,27] = p47
C[39,28] = p77
C[40,25] = p46*p104*p99
C[40,27] = -p47 - p48
C[41,27] = p48
C[41,28] = -p77 - p49*p104*p100 - p52*p104*p101
C[41,29] = p50 + p51
C[41,31] = p53 + p54
C[42,28] = -p49*p104*p100
C[42,29] = p50
C[42,71] = 1
C[42,72] = -p100
C[43,28] = p49*p104*p100
C[43,29] = -p50 - p51
C[44,29] = p51
C[44,30] = -p55
C[44,33] = p56
C[45,28] = -p52*p104*p101
C[45,31] = p53
C[45,62] = 1

```



```

C[45,63] = -p101
C[46,28] = p52*p104*p101
C[46,31] = -p53 - p54
C[47,31] = p54
C[47,32] = -p65
C[47,38] = p66
C[48,30] = p55
C[48,33] = -p56 - p86 - p58*p102
C[48,34] = p57 + p59
C[49,33] = -p58*p102
C[49,34] = p59
C[49,35] = p78
C[50,33] = p58*p102
C[50,34] = -p57 - p59
C[51,34] = p57
C[51,35] = -p78 - p60*p103
C[51,36] = p61
C[52,35] = -p60*p103
C[52,36] = p61
C[53,35] = p60*p103
C[53,36] = -p61 - p62*p91 - p67*p93
C[53,37] = p63 + p64
C[53,39] = p68 + p83
C[54,36] = p62*p91
C[54,37] = -p63 - p64
C[55,32] = p65
C[55,38] = -p66 - p79 - p69*p93
C[55,40] = p70
C[56,36] = p67*p93
C[56,39] = -p68 - p83
C[57,38] = p69*p93
C[57,40] = -p70 - p80
C[58,13] = p22
C[58,41] = -p81

```

And all other elements in C are zero.

The null space of C is spanned by the columns of N =

```

N[ 1, 1] = (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*p
16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*p
93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13
*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93
+ p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p1
8*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*
p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p
22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)*(p7 + p
8)*p71*p88*p4*(p2 + p3)/p87/p1/(p5 + p71)/p3/p6/p11/p13/p14/p16/p
17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)
N[ 1, 3] = -(p68 + p83)*(p12 + p13)*p64*p62*p90*p9*p72*(p7 + p8)*p71*p88*p4*
(p2 + p3)/p89/p87/p1/(p5 + p71)/p3/p6/p11/p13/p67/p93/(p63 + p64)
/p8/(p10 + p72)
N[ 2, 1] = p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p2
2 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*
p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10
*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p1
6*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 +
p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p
20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*
p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91
*p92*p72*p21)/(p5 + p71)/p3/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/
(p21 + p22)/p8/(p10 + p72)
N[ 2, 3] = -p4*p88*p71*(p7 + p8)*p72*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/
p89/(p5 + p71)/p3/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)
N[ 3, 1] = (p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11
*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20
*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*
p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p

```

$$22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)$$

$$N[3, 3] = -(p7 + p8)*p72*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p89/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)$$

$$N[4, 1] = (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)*(p7 + p8)*p4*p88/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)$$

$$N[4, 3] = -(p68 + p83)*(p12 + p13)*p64*p62*p90*p9*p72*(p7 + p8)*p4*p88/p89/(p5 + p71)/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)$$

$$N[5, 1] = (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)/p11/p13/p14/p16/p17/p89/p91/p92/(p21 + p22)/p8/(p10 + p72)$$

$$N[5, 3] = -p72*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)$$

$$N[6, 1] = (p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91$$

$$N[6, 3] = -(p12 + p13)*(p68 + p83)*p62*p64/(p63 + p64)/p93/p67/p13/p11$$

$$N[7, 1] = (p18 + p19)*(p15 + p16)*p93*p82*p22*p20*(p12 + p13)*p9*p90/(p10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91$$

$$N[7, 3] = -(p68 + p83)*p64*p62*(p12 + p13)*p9*p90/(p10 + p72)/(p63 + p64)/p93/p67/p13/p11$$

$$N[8, 1] = p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p13/p14/p16/p17/p89/p92/(p21 + p22)$$

$$N[8, 3] = -(p68 + p83)*p62*p64*p91/p13/p67/p93/(p63 + p64)$$

$$N[9, 1] = (p15 + p16)*p82*(p18 + p19)/p17/p89/p16/p14/p92$$

$$N[10, 1] = p82*(p18 + p19)/p17/p89/p16$$

$$N[11, 1] = (p18 + p19)/p17/p89$$

$$N[12, 1] = 1$$

$$N[13, 1] = p20*p93*p82*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21 + p22)$$

$$N[14, 1] = p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24 + p25)$$

$$N[15, 1] = p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/p84/(p24 + p25)$$

$$N[16, 1] = (p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p26*p95/(p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91$$

$$N[16, 3] = -(p68 + p83)*(p12 + p13)*p64*p62*p26*p95/(p63 + p64)/(p27 + p28)/p93/p67/p13/p11$$

$$N[17, 1] = (p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p95*p28*p26*(p30 + p73)/p96/p29/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/p16/p14/p13/p11$$

$$N[17, 3] = -(p68 + p83)*(p12 + p13)*p64*p62*p95*p28*p26*(p30 + p73)/p96/p29/(p63 + p64)/(p27 + p28)/p93/p73/p67/p13/p11$$

$$N[18, 1] = p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/p16/p14/p13/p11$$

$$N[18, 3] = -p26*p28*p95*p62*p64*(p68 + p83)*(p12 + p13)/(p63 + p64)/(p27 + p28)/p93/p73/p67/p13/p11$$

$$N[19, 1] = (p30 + p73)*(p18 + p19)*(p15 + p16)*(p12 + p13)*p93*p82*p22*p20*p97*p95*p31*p28*p26/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/p92/p91/p89/p73/p29/p17/p16/p14/p13/p11$$

$$N[19, 3] = -(p68 + p83)*(p30 + p73)*(p12 + p13)*p64*p62*p97*p95*p31*p28*p26/$$

```

N[20, 1] = (p63 + p64)/(p32 + p33)/(p27 + p28)/p96/p93/p73/p67/p29/p13/p11
          p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p18 + p19)*(p15 + p16)*(
          p30 + p73)*(p104*p98*p74*p36 + p35*p74 + p35*p37)*(p12 + p13)/p11
          /p13/p14/p16/p17/p29/p34/p36/p73/p74/p89/p91/p92/p96/p98/p104/(p3
          2 + p33)/(p27 + p28)/(p21 + p22)
N[20, 2] = -2/p34*p35/p36/p74*p75/p98/p104*(p37 + p74)
N[20, 3] = -(p68 + p83)*(4*p11*p33*p35*p46*p48*p50*p59*p61*p13*p64*p73*p74*p
          76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p46*p48*p50*p59*p6
          1*p63*p13*p73*p74*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35
          *p46*p48*p50*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p99*p27*
          p29 + 4*p11*p33*p35*p46*p48*p50*p57*p61*p13*p64*p73*p74*p76*p77*p
          78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p46*p48*p50*p57*p61*p13*p6
          4*p73*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p46*p48
          *p50*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p99*p28*p29 + 4*
          p11*p33*p35*p46*p48*p50*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p
          96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p59*p61*p13*p64*p7
          3*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p51
          *p59*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*
          p35*p45*p46*p48*p51*p59*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p
          28*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p59*p61*p63*p13*p73*p74*p7
          7*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p57*p61
          *p13*p64*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*
          p46*p48*p51*p57*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p27*p29 +
          4*p11*p33*p35*p45*p46*p48*p51*p57*p61*p63*p13*p73*p74*p77*p78*p8
          6*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p57*p61*p63*p13
          *p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*
          p50*p59*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p
          33*p35*p45*p46*p48*p50*p59*p61*p13*p64*p73*p74*p77*p78*p86*p96*p9
          9*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p59*p61*p63*p13*p73*p74
          *p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p59*
          p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*
          p45*p46*p48*p50*p57*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p28*
          p29 + 4*p11*p33*p35*p45*p46*p48*p50*p57*p61*p13*p64*p73*p74*p77*
          p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p57*p61*
          p63*
          p13*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p
          48*p50*p57*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p1
          1*p33*p35*p44*p48*p51*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96
          *p98*p28*p29 + 4*p11*p33*p35*p44*p48*p51*p59*p61*p13*p64*p73*p74*
          p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p48*p51*p59*
          p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*
          p35*p44*p48*p51*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*
          p27*
          p29 + 4*p11*p33*p35*p44*p48*p51*p57*p61*p13*p64*p73*p74*p76*p77*
          p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p48*p51*p57*p61*p13*
          p64*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*
          p48*p50*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29
          + 4*p11*p33*p35*p44*p48*p50*p57*p61*p63*p13*p73*p74*p76*p77*p78*
          p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p48*p50*p57*p61*p63*p13*
          p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p48*
          p50*p59*
          p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*
          p35*p44*p48*p50*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*
          p28*
          p29 + 4*p11*p33*p35*p44*p48*p50*p59*p61*p63*p13*p73*p74*p76*p77*
          p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p48*p50*p57*p61*p1
          3*p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44
          *p48*p50*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29
          + 4*p11*p33*p35*p44*p48*p50*p57*p61*p63*p13*p73*p74*p76*p77*p78*
          p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p48*p50*p57*p61*p63*p13*
          p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p47*
          p51*
          p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*
          p33*p35*p44*p47*p51*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*
          p98*
          p27*p29 + 4*p11*p33*p35*p44*p47*p51*p59*p61*p63*p13*p73*p74*p76*
          p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p47*p51*p59*p61*
          p63*
          p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*
          p44*p47*p51*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*
          p29 + 4*p11*p33*p35*p44*p47*p51*p57*p61*p13*p64*p73*p74*p76*p77*
          p78*
          p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p47*p51*p57*p61*p63*p13
          *p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p47*
          p51*
          p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p
          11*p33*p35*p44*p47*p50*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p9

```

6*p98*p28*p29 + 4*p11*p33*p35*p44*p47*p50*p59*p61*p13*p64*p73*p74
*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p47*p50*p59*
p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p
35*p44*p47*p50*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p2
7*p29 + 4*p11*p33*p35*p44*p47*p50*p57*p61*p13*p64*p73*p74*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p47*p50*p57*p61*p13*
p64*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p
47*p50*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 +
4*p11*p33*p35*p44*p47*p50*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86
*p96*p98*p27*p29 + 4*p11*p33*p35*p37*p46*p48*p51*p59*p61*p13*p64*
p73*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p37*p46*p48*p
51*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p3
3*p35*p37*p46*p48*p51*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p99
*p28*p29 + 4*p11*p33*p35*p37*p46*p48*p51*p59*p61*p63*p13*p73*p76*
p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p37*p46*p48*p51*p57*p
61*p13*p64*p73*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p3
7*p46*p48*p51*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p33*p35*p37*p46*p48*p51*p57*p61*p63*p13*p73*p76*p77*p78*
p86*p96*p99*p28*p29 + 4*p11*p33*p35*p37*p46*p48*p51*p57*p61*p63*p
13*p73*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p37*p46*p4
8*p50*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11
*p33*p35*p37*p46*p48*p50*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*
p99*p27*p29 + 4*p11*p33*p35*p37*p46*p48*p50*p59*p61*p63*p13*p73*p
76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p37*p46*p48*p50*p5
9*p61*p63*p13*p73*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35
*p37*p46*p48*p50*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p99*p28*
p29 + 4*p11*p33*p35*p37*p46*p48*p50*p57*p61*p13*p64*p73*p76*p77*p
78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p37*p46*p48*p50*p57*p61*p6
3*p13*p73*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p37*p46
*p48*p50*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p33*p35*p37*p45*p46*p48*p51*p59*p61*p13*p64*p73*p77*p78*p86*p
96*p99*p28*p29 + 4*p11*p33*p35*p37*p45*p46*p48*p50*p59*p61*p63*p13
*p64*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p37*p45*p46*
p48*p51*p59*p61*p63*p13*p73*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*
p35*p37*p45*p46*p48*p51*p59*p61*p63*p13*p73*p77*p78*p86*p96*p99*p
27*p29 + 4*p11*p33*p35*p37*p45*p46*p48*p51*p57*p61*p13*p64*p73*p7
7*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p37*p45*p46*p48*p51*p57
*p61*p13*p64*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p37*
p45*p46*p48*p51*p57*p61*p63*p13*p73*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p35*p37*p45*p46*p48*p51*p57*p61*p63*p13*p73*p77*p78*p8
6*p96*p99*p27*p29 + 4*p11*p33*p35*p37*p45*p46*p48*p50*p59*p61*p13
*p64*p73*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p37*p45*p46*
p48*p50*p59*p61*p13*p64*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
33*p35*p37*p45*p46*p48*p50*p59*p61*p63*p13*p73*p77*p78*p86*p96*p9
9*p28*p29 + 4*p11*p33*p35*p37*p45*p46*p48*p50*p59*p61*p63*p13*p73
*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p37*p45*p46*p48*p50*
p57*p61*p13*p64*p73*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p
37*p45*p46*p48*p50*p57*p61*p13*p64*p73*p77*p78*p86*p96*p99*p27*p2
9 + 4*p11*p33*p35*p37*p45*p46*p48*p50*p57*p61*p63*p13*p73*p77*p78
*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p37*p45*p46*p48*p50*p57*p61*
p63*p13*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p37*p44*p
48*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p1
1*p33*p35*p37*p44*p48*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p33*p35*p37*p44*p48*p51*p59*p61*p63*p13*p73*
p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p37*p44*p48*p51*p
59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p3
5*p37*p44*p48*p51*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p28
*p29 + 4*p11*p33*p35*p37*p44*p48*p51*p57*p61*p13*p64*p73*p76*p77*
p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p37*p44*p48*p51*p57*p61*p
63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p37*p4
4*p48*p51*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4
*p11*p33*p35*p37*p44*p48*p50*p59*p61*p13*p64*p73*p76*p77*p78*p86*
p96*p98*p28*p29 + 4*p11*p33*p35*p37*p44*p48*p50*p59*p61*p13*p64*p
73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p37*p44*p48*p5
0*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33
*p35*p37*p44*p48*p50*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*
p27*p29 + 4*p11*p33*p35*p37*p44*p48*p50*p57*p61*p13*p64*p73*p76*p
77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p37*p44*p48*p50*p57*p6

1*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p37
*p44*p48*p50*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p33*p35*p37*p44*p48*p50*p57*p61*p63*p13*p73*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p33*p35*p37*p44*p47*p51*p59*p61*p13*p6
4*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p37*p44*p47
*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*
p33*p35*p37*p44*p47*p51*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p
98*p28*p29 + 4*p11*p33*p35*p37*p44*p47*p51*p59*p61*p63*p13*p73*p7
6*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p37*p44*p47*p51*p57
*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*
p37*p44*p47*p51*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*p
29 + 4*p11*p33*p35*p37*p44*p47*p51*p57*p61*p63*p13*p73*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p37*p44*p47*p51*p57*p61*p63
*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p37*p44*
p47*p50*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p
11*p33*p35*p37*p44*p47*p50*p59*p61*p13*p64*p73*p76*p77*p78*p86*p9
6*p98*p27*p29 + 4*p11*p33*p35*p37*p44*p47*p50*p59*p61*p63*p13*p73
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p37*p44*p47*p50*
p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p
35*p37*p44*p47*p50*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p2
8*p29 + 4*p11*p33*p35*p37*p44*p47*p50*p57*p61*p13*p64*p73*p76*p77
*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p37*p44*p47*p50*p57*p61*
p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p37*p
44*p47*p50*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p32*p35*p46*p48*p51*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p32*p35*p46*p48*p51*p59*p61*p13*p64*p73*
p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p46*p48*p51*p
59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
2*p35*p46*p48*p51*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p99
*p27*p29 + 4*p11*p32*p35*p46*p48*p51*p57*p61*p13*p64*p73*p74*p76*
p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p46*p48*p51*p57*p61*p
13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p4
6*p48*p51*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p32*p35*p46*p48*p51*p57*p61*p63*p13*p73*p74*p76*p77*p78*
p86*p96*p99*p27*p29 + 4*p11*p32*p35*p46*p48*p50*p59*p61*p13*p64*p
73*p74*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p46*p48*p5
0*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11
*p32*p35*p46*p48*p50*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*
p99*p28*p29 + 4*p11*p32*p35*p46*p48*p50*p59*p61*p63*p13*p73*p74*p
76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p46*p48*p50*p57*p6
1*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35
*p46*p48*p50*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p27*
p29 + 4*p11*p32*p35*p46*p48*p50*p57*p61*p63*p13*p73*p74*p76*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p46*p48*p50*p57*p61*p63*p1
3*p73*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p45*p46
*p48*p51*p59*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*
p11*p32*p35*p45*p46*p48*p51*p59*p61*p13*p64*p73*p74*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p32*p35*p45*p46*p48*p51*p59*p61*p63*p13*p7
3*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p45*p46*p48*p51
*p59*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*
p35*p45*p46*p48*p51*p57*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p32*p35*p45*p46*p48*p51*p57*p61*p13*p64*p73*p74*p7
7*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p45*p46*p48*p51*p57*p61
*p63*p13*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p45*
p46*p48*p51*p57*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p33*p35*p46*p48*p51*p59*p61*p13*p64*p73*p74*p76*p77*p78*p8
6*p96*p99*p28*p29 + 4*p11*p33*p35*p46*p48*p51*p59*p61*p13*p64*p73
*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p46*p48*p51*
p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p
33*p35*p46*p48*p51*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p33*p35*p46*p48*p51*p57*p61*p13*p64*p73*p74*p76
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p46*p48*p51*p57*p61*
p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p
46*p48*p51*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p33*p35*p46*p48*p51*p57*p61*p63*p13*p73*p74*p76*p77*p78
*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p46*p48*p50*p59*p61*p13*p64*
p73*p74*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p45*p46*
p48*p50*p59*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p1

1*p32*p35*p45*p46*p48*p50*p59*p61*p13*p64*p73*p74*p77*p78*p86*p96
*p99*p27*p29 + 4*p11*p32*p35*p45*p46*p48*p50*p59*p61*p63*p13*p73*
p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p45*p46*p48*p50*p
59*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p3
5*p45*p46*p48*p50*p57*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p32*p35*p45*p46*p48*p50*p57*p61*p13*p64*p73*p74*p77*
p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p45*p46*p48*p50*p57*p61*p
63*p13*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p45*p4
6*p48*p50*p57*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p32*p35*p44*p48*p51*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*
p96*p98*p28*p29 + 4*p11*p32*p35*p44*p48*p51*p59*p61*p13*p64*p73*p
74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p44*p48*p51*p5
9*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32
*p35*p44*p48*p51*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*
p27*p29 + 4*p11*p32*p35*p44*p48*p51*p57*p61*p13*p64*p73*p74*p76*p
77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p44*p48*p51*p57*p61*p1
3*p64*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p44
*p48*p51*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p32*p35*p44*p48*p51*p57*p61*p63*p13*p73*p74*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p32*p35*p44*p48*p50*p59*p61*p13*p64*p7
3*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p44*p48*p50
*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*
p32*p35*p44*p48*p50*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p
98*p28*p29 + 4*p11*p32*p35*p44*p48*p50*p59*p61*p63*p13*p73*p74*p7
6*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p44*p48*p50*p57*p61
*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*
p44*p48*p50*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p27*p
29 + 4*p11*p32*p35*p44*p48*p50*p57*p61*p63*p13*p73*p74*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p44*p48*p50*p57*p61*p63*p13
*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p44*p47*
p51*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p
11*p32*p35*p44*p47*p51*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p9
6*p98*p27*p29 + 4*p11*p32*p35*p44*p47*p51*p59*p61*p63*p13*p73*p74
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p44*p47*p51*p59*
p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p
35*p44*p47*p51*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p2
8*p29 + 4*p11*p32*p35*p44*p47*p51*p57*p61*p13*p64*p73*p74*p76*p77
*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p44*p47*p51*p57*p61*p63*
p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p44*p
47*p51*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p32*p35*p44*p47*p50*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86
*p96*p98*p28*p29 + 4*p11*p32*p35*p44*p47*p50*p59*p61*p13*p64*p73*
p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p44*p47*p50*p
59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p3
2*p35*p44*p47*p50*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98
*p27*p29 + 4*p11*p32*p35*p44*p47*p50*p57*p61*p13*p64*p73*p74*p76*
p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p44*p47*p50*p57*p61*p
13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p4
4*p47*p50*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p32*p35*p44*p47*p50*p57*p61*p63*p13*p73*p74*p76*p77*p78*
p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p46*p48*p51*p59*p61*p13*p
64*p73*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p46*p4
8*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11
*p32*p35*p37*p46*p48*p51*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*
p99*p28*p29 + 4*p11*p32*p35*p37*p46*p48*p51*p59*p61*p63*p13*p73*p
76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p46*p48*p51*p5
7*p61*p13*p64*p73*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35
*p37*p46*p48*p51*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p99*p27*
p29 + 4*p11*p32*p35*p37*p46*p48*p51*p57*p61*p63*p13*p73*p76*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p46*p48*p51*p57*p61*p6
3*p13*p73*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p46
*p48*p50*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p99*p28*p29 + 4*
p11*p32*p35*p37*p46*p48*p50*p59*p61*p13*p64*p73*p76*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p32*p35*p37*p46*p48*p50*p59*p61*p63*p13*p7
3*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p46*p48*p50
*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*
p35*p37*p46*p48*p50*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p32*p35*p37*p46*p48*p50*p57*p61*p13*p64*p73*p76*p7

7*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p46*p48*p50*p57*p61
*p63*p13*p73*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*
p46*p48*p50*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p32*p35*p37*p45*p46*p48*p51*p59*p61*p13*p64*p73*p77*p78*p8
6*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p51*p59*p61*p13
*p64*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p45*p46*
p48*p51*p59*p61*p63*p13*p73*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p
32*p35*p37*p45*p46*p48*p51*p59*p61*p63*p13*p73*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p51*p57*p61*p13*p64*p73
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p51*
p57*p61*p13*p64*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p
37*p45*p46*p48*p51*p57*p61*p63*p13*p73*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p32*p35*p37*p45*p46*p48*p51*p57*p61*p63*p13*p73*p77*p78
*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p51*p59*p61*
p13*p64*p73*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p45*p
46*p48*p50*p59*p61*p13*p64*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p1
1*p32*p35*p37*p45*p46*p48*p50*p59*p61*p63*p13*p73*p77*p78*p86*p96
*p99*p28*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p50*p59*p61*p63*p13*
p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p
50*p57*p61*p13*p64*p73*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p3
5*p37*p45*p46*p48*p50*p57*p61*p13*p64*p73*p77*p78*p86*p96*p99*p27
*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p50*p57*p61*p63*p13*p73*p77*
p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p50*p57*p
61*p63*p13*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p4
4*p48*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p32*p35*p37*p44*p48*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86*
p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p48*p51*p59*p61*p63*p13*p
73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p48*p5
1*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32
*p35*p37*p44*p48*p51*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*
p28*p29 + 4*p11*p32*p35*p37*p44*p48*p51*p57*p61*p13*p64*p73*p76*p
77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p48*p50*p59*p61
*p13*p64*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37
*p44*p48*p51*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p32*p35*p37*p44*p48*p50*p59*p61*p13*p64*p73*p76*p77*p78*p
86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p48*p50*p59*p61*p13*p6
4*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p48
*p50*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*
p32*p35*p37*p44*p48*p50*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p
98*p27*p29 + 4*p11*p32*p35*p37*p44*p48*p50*p57*p61*p13*p64*p73*p7
6*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p48*p50*p57
*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*
p37*p44*p48*p50*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p
29 + 4*p11*p32*p35*p37*p44*p48*p50*p57*p61*p63*p13*p73*p76*p77*p7
8*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p47*p51*p59*p61*p13
*p64*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*
p47*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p
11*p32*p35*p37*p44*p47*p51*p59*p61*p63*p13*p73*p76*p77*p78*p86*p9
6*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p47*p51*p59*p61*p63*p13*p73
*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p47*p51*
p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p
35*p37*p44*p47*p51*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p2
7*p29 + 4*p11*p32*p35*p37*p44*p47*p51*p57*p61*p63*p13*p73*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p47*p51*p57*p61*
p63*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*
p44*p47*p50*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p28*p29 +
4*p11*p32*p35*p37*p44*p47*p50*p59*p61*p13*p64*p73*p76*p77*p78*p86
*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p47*p50*p59*p61*p63*p13*
p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p47*p
50*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p3
2*p35*p37*p44*p47*p50*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98
*p28*p29 + 4*p11*p32*p35*p37*p44*p47*p50*p57*p61*p13*p64*p73*p76*
p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p47*p50*p57*p
61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p3
7*p44*p47*p50*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29
+ p33*p35*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p74*p76*p95*p2
6*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p33*p35*p46*p48*p49*p
51*p57*p58*p60*p62*p13*p64*p73*p74*p76*p95*p26*p97*p99*p100*p102*

$$\begin{aligned}
& p103*p104*p28*p31 + p33*p35*p46*p48*p12*p49*p51*p57*p58*p60*p62*p \\
& 64*p74*p76*p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p33* \\
& p35*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p73*p74*p76*p95*p26*p \\
& 97*p99*p100*p102*p103*p104*p28*p31 + p33*p35*p45*p46*p48*p49*p51* \\
& p57*p58*p60*p62*p13*p64*p74*p95*p26*p97*p99*p100*p102*p103*p104*p \\
& 28*p30*p31 + p33*p35*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64* \\
& p73*p74*p95*p26*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p35*p45 \\
& *p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p74*p95*p26*p97*p99*p100 \\
& *p102*p103*p104*p28*p30*p31 + p33*p35*p45*p46*p48*p12*p49*p51*p57 \\
& *p58*p60*p62*p64*p73*p74*p95*p26*p97*p99*p100*p102*p103*p104*p28* \\
& p31 + p33*p35*p37*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p76*p95 \\
& *p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p33*p35*p37*p46*p4 \\
& 8*p49*p51*p57*p58*p60*p62*p13*p64*p73*p76*p95*p26*p97*p99*p100*p1 \\
& 02*p103*p104*p28*p31 + p33*p35*p37*p46*p48*p12*p49*p51*p57*p58*p6 \\
& 0*p62*p64*p76*p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p \\
& 33*p35*p37*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p73*p76*p95*p2 \\
& 6*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p35*p37*p45*p46*p48*p \\
& 49*p51*p57*p58*p60*p62*p13*p64*p95*p26*p97*p99*p100*p102*p103*p10 \\
& 4*p28*p30*p31 + p33*p35*p37*p45*p46*p48*p49*p51*p57*p58*p60*p62*p \\
& 13*p64*p73*p95*p26*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p35* \\
& p37*p45*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p95*p26*p97*p99*p \\
& 100*p102*p103*p104*p28*p30*p31 + p33*p35*p37*p45*p46*p48*p12*p49* \\
& p51*p57*p58*p60*p62*p64*p73*p95*p26*p97*p99*p100*p102*p103*p104*p \\
& 28*p31 + p33*p36*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p74*p76* \\
& p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p30*p31 + p33*p36*p \\
& 46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p74*p76*p95*p26*p97*p9 \\
& 8*p99*p100*p102*p103*p104^2*p28*p31 + p33*p36*p46*p48*p12*p49*p51 \\
& *p57*p58*p60*p62*p64*p74*p76*p95*p26*p97*p98*p99*p100*p102*p103*p \\
& 104^2*p28*p30*p31 + p33*p36*p46*p48*p12*p49*p51*p57*p58*p60*p62*p \\
& 64*p73*p74*p76*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p31 \\
& + p33*p36*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p74*p95*p26 \\
& *p97*p98*p99*p100*p102*p103*p104^2*p28*p30*p31 + p33*p36*p45*p46* \\
& p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p74*p95*p26*p97*p98*p99*p \\
& 100*p102*p103*p104^2*p28*p31 + p33*p36*p45*p46*p48*p12*p49*p51*p5 \\
& 7*p58*p60*p62*p64*p74*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p \\
& 28*p30*p31 + p33*p36*p45*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64* \\
& p73*p74*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p31)/(p104^2 \\
& /p60/p103/p57/p58/p102/p51/p49/p100/p48/p46/p99/p67/p93/p13/p11/p \\
& 29/p96/p73/p74/(p63 + p64)/(p32 + p33)/(p27 + p28)/(p45 + p76)/p3 \\
& 6/p98/p34 \\
N[21, 1] = & p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p30 + p73)*(p18 + p19)*(\\
& p15 + p16)*(p12 + p13)*(p37 + p74)/p11/p13/p14/p16/p17/p29/p36/p7 \\
& 3/p74/p89/p91/p92/p96/p98/p104/(p32 + p33)/(p27 + p28)/(p21 + p22 \\
&) \\
N[21, 2] = & -2/p36/p74*p75/p98/p104*(p37 + p74) \\
N[21, 3] = & -(p68 + p83)*(p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76 \\
& *p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p4 \\
& 9*p51*p57*p58*p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104 \\
& *p28*p30*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p1 \\
& 3*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p \\
& 49*p51*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p10 \\
& 4*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p \\
& 73*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p11*p33*p44*p4 \\
& 7*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11 \\
& *p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27* \\
& p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p \\
& 96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p7 \\
& 7*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*p73 \\
& *p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59* \\
& p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p \\
& 48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p1 \\
& 1*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27 \\
& *p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86* \\
& p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p \\
& 77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p7 \\
& 3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59 \\
& *p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44* \\
& p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p
\end{aligned}$$

11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
7*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*
p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p
63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p5
1*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45
*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p8
6*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*
p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p
50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p4
6*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*
*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*
p27*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61
*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*
p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p
45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99
*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*
p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p
13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p6
1*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51
*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*
p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*
p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p5
0*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33
*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p33*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p
51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p3
2*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p32*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*
p98*p27*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p1
3*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*
p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96
*p99*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*
p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p6
1*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48
*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p9
6*p99*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*
p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p4
7*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*
p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p7
7*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64
*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*
p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p

26

```

* p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p48*p51*p59*
p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p
48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29)*(p37
+ p74)/p98/p36/(p63 + p64)/(p45 + p76)/(p32 + p33)/(p27 + p28)/p7
4/p73/p96/p29/p11/p13/p93/p67/p99/p46/p48/p100/p49/p51/p102/p58/p
57/p103/p60/p104^2
N[22, 1] = (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*p
33*p31*p28*p26*p22*p20/p11/p13/p14/p16/p17/p29/p73/p74/p89/p91/p9
2/p96/(p32 + p33)/(p27 + p28)/(p21 + p22)
N[22, 2] = -2/p74*p75
N[22, 3] = -(p68 + p83)*(p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76
*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p4
9*p51*p57*p58*p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104
*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p1
3*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p
49*p51*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p10
4*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p
73*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p11*p33*p44*p4
7*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11
*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*
p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p7
7*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59*
p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p
48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p1
1*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27
*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*
p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p7
3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*
p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p
11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
7*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*
p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p
63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p5
1*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45
*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p8
6*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*
p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p
50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p4
6*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4
*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*
p27*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p
13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p6
1*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51
*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*
p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*
p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p5
0*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33
*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29

```

+ 4*p11*p33*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p
51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p3
2*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p32*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*
p98*p27*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p1
3*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*
p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96
*p99*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*
p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p6
1*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48
*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p9
6*p99*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*
p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p4
7*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*
p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p7
7*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64
*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*
p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p
46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p1
1*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28
*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*
p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p64*p7
3*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p59
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*
p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p
11*p33*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
8*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*
p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p5
9*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44
*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*
p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p
28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p63*
p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p
57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p4
4*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*
p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*
p28*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p1
3*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61
*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*
p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p
45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*
p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p6
3*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50
*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*

$$\begin{aligned}
& p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + \\
& p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26* \\
& p100*p102*p103*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60 \\
& *p62*p64*p73*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 \\
& + p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26 \\
& *p100*p102*p103*p104*p28*p30*p31 + 4*p11*p32*p44*p48*p50*p57*p61* \\
& p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p \\
& 50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p3 \\
& 2*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 \\
& + 4*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96* \\
& p98*p27*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p \\
& 78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p1 \\
& 3*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61 \\
& *p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47* \\
& p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p \\
& 32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p2 \\
& 9 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96 \\
& *p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77* \\
& p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p \\
& 13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59*p6 \\
& 1*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48 \\
& *p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11* \\
& p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p \\
& 29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p9 \\
& 6*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77 \\
& *p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73* \\
& p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p \\
& 61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p4 \\
& 8*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11 \\
& *p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28* \\
& p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p \\
& 96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p7 \\
& 7*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63 \\
& *p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p48*p51*p59* \\
& p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p \\
& 48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29)/(p63 \\
& + p64)/(p45 + p76)/(p32 + p33)/(p27 + p28)/p74/p73/p96/p29/p11/p1 \\
& 3/p93/p67/p99/p46/p48/p100/p49/p51/p102/p58/p57/p103/p60/p104 \\
N[23, 2] = (p41 + p75)/p40/p104/p98 \\
N[24, 2] = 1 \\
N[25, 3] = p77*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)*(p47 + p48)/p \\
99/p46/p100/p49/p51/p102/p58/p57/p103/p60/p67/p93/p104^2/p48 \\
N[26, 3] = p44*p98*(p47 + p48)*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p \\
61*p77/p48/p104/p93/p67/p60/p103/p57/p58/p102/p51/p49/p100/p46/p9 \\
9/(p45 + p76) \\
N[27, 3] = (p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61*p77/p100/p49/p51/ \\
p102/p58/p57/p103/p60/p67/p93/p104/p48 \\
N[28, 3] = (p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61/p104/p93/p67/p60/ \\
p103/p57/p58/p102/p51/p49/p100 \\
N[29, 3] = p61*p78*p86*(p68 + p83)*(p57 + p59)/p67/p93/p60/p103/p57/p58/p102 \\
/p51 \\
N[30, 3] = p61*p78*(p68 + p83)*(p57 + p59)*(p56 + p86)/p67/p93/p60/p103/p57/ \\
p58/p102/p55 \\
N[31, 3] = p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p93/(p53 \\
+ p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100 \\
N[32, 3] = (p79*p80 + p66*p70 + p66*p80 + p79*p70 + p69*p93*p80)*p54*p52*p10 \\
1*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p67/p60/p103/p5 \\
7/p58/p102/p51/p49/p100/(p79*p80 + p79*p70 + p69*p93*p80)/(p53 + \\
p54)/p93/p65 \\
N[33, 3] = p78*(p57 + p59)*(p68 + p83)*p61/p103/p60/p67/p93/p57/p58/p102 \\
N[34, 3] = p78*(p68 + p83)*p61/p103/p60/p67/p93/p57 \\
N[35, 3] = (p68 + p83)*p61/p103/p60/p67/p93 \\
N[36, 3] = (p68 + p83)/p67/p93 \\
N[37, 3] = p62*p91*(p68 + p83)/p67/p93/(p63 + p64) \\
N[38, 3] = (p70 + p80)*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 \\
+ p51)/p93/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p4 \\
9/p51/p102/p58/p57/p103/p60/p67 \\
N[39, 3] = 1
\end{aligned}$$

```

N[40, 3] = p69*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/
          (p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p49/p51/p102/p
          58/p57/p103/p60/p67
N[41, 1] = p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/p81/(
          p21 + p22)
N[42, 2] = (p41*p39 + p104*p40*p98*p75 + p75*p39)/c1/k38/p98/p40/p104
N[42, 3] = 2*p77*p86*p78*p61*(p57 + p59)*(p50 + p51)*(p68 + p83)*(p46*p99*p7
          6*p48 + p46*p99*p45*p48 + p98*p44*p76*p48 + p98*p44*p76*p47)/p104
          /(p45 + p76)/p67/p60/p103/p57/p58/p102/p51/p49/p100/p93/p48/p46/p
          99/k38/c1
N[43, 3] = p77*p86*p78*p61*(p50 + p51)*(p68 + p83)*(p57 + p59)*(p46*p104*p99
          *p45*p48 + p43*p45*p48 + p44*p98*p104*p76*p48 + p46*p104*p99*p76*
          p48 + p44*p98*p104*p76*p47 + p43*p76*p48 + p43*p45*p47 + p43*p76*
          p47)/c1/k42/p46/p48/p49/p51/p57/p58/p60/p67/p93/p99/p100/p102/p10
          3/p104^2/(p45 + p76)
N[44, 1] = p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p2
          2 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*
          p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10
          *p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p1
          6*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 +
          p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p
          20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*
          p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91
          *p92*p72*p21)/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p2
          1 + p22)/p8/(p10 + p72)
N[44, 3] = -(p68 + p83)*(p12 + p13)*(p7 + p8)*p4*p88*p71*p72*p9*p90*p62*p64/
          p89/(p5 + p71)/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)
N[44, 4] = p87
N[45, 4] = 1
N[46, 1] = p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p2
          2 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*
          p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10
          *p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p1
          6*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 +
          p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p
          20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*
          p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91
          *p92*p72*p21)/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p2
          1 + p22)/p8/(p10 + p72)
N[46, 3] = -(p68 + p83)*(p12 + p13)*(p7 + p8)*p4*p88*p71*p72*p9*p90*p62*p64/
          p89/(p5 + p71)/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)
N[46, 5] = p88
N[47, 5] = 1
N[48, 1] = (p15 + p16)*(p18 + p19)*(p12 + p13)*p72*p9*p90*p20*p22*p82*p93/(p
          10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91
N[48, 3] = -(p12 + p13)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p
          67/p93/(p63 + p64)
N[48, 6] = p89
N[49, 6] = 1
N[50, 1] = (p15 + p16)*(p18 + p19)*(p12 + p13)*p72*p9*p90*p20*p22*p82*p93/(p
          10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91
N[50, 3] = -(p12 + p13)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p
          67/p93/(p63 + p64)
N[50, 7] = p90
N[51, 7] = 1
N[52, 1] = p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(
          p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91
N[52, 3] = -(p12 + p13)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p
          28)/p93/p67/p13/p11
N[52, 8] = p95
N[53, 8] = 1
N[54, 1] = p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(
          p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91
N[54, 3] = -(p12 + p13)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p
          28)/p93/p67/p13/p11
N[54, 9] = p96
N[55, 9] = 1
N[56, 1] = (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*p

```

```

33*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/p9
2/p91/p89/p73/p29/p17/p16/p14/p13/p11
N[56, 3] = -p97*(p68 + p83)*(p30 + p73)*(p12 + p13)*p26*p28*p31*p33*p62*p64*
p95/p11/p13/p67/p73/p93/(p63 + p64)/(p32 + p33)/(p27 + p28)/p29/p
96
N[56,10] = p97
N[57,10] = 1
N[58, 1] = (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*p
33*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/p9
2/p91/p89/p73/p29/p17/p16/p14/p13/p11
N[58, 2] = -p75
N[58, 3] = -(p68 + p83)*(p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76
*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p4
9*p51*p57*p58*p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104
*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p1
3*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p
49*p51*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p10
4*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p
73*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 3*p11*p33*p44*p4
7*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11
*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*
p29 + 3*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p7
7*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p51*p59*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p51*p59*
p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p51*p59
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*
p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p1
1*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27
*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*
p96*p98*p28*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p51*p59*p61*p63*p7
3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p51*p59
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*
p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p
11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
7*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*
p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*
p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p5
1*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45
*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p8
6*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*
p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p
50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p4
6*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4
*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*
p27*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61
*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*
p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p
45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99
*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*
p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p
13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p6
1*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51
*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*
p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*
p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p5
0*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33

```

*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p33*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
99*p27*p29 + 3*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p51*p57*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p
51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p3
2*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 3*p11*p32*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*
p98*p27*p29 + 3*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p50*p59*p61*p63*p73*p1
3*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*
p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96
*p99*p27*p29 + 3*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*
p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p57*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p6
1*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48
*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p9
6*p99*p27*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p63*p73*
p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p50*p59*
p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p4
7*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*
p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p7
7*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64
*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*
p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p
46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p1
1*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28
*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*
p96*p98*p27*p29 + 3*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p50*p59*p61*p64*p7
3*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p50*p59
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*
p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p
11*p33*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
8*p29 + 3*p11*p33*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*
p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p50*p57*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p47*p51*p5
9*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44
*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*
p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*
p28*p29 + 3*p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p50*p59*p61*p63*
p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p50*p
57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p4
4*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3
*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*
p28*p29 + 3*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p1
3*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61
*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*
p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p
45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 +
3*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 3*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*
p86*p96*p98*p27*p29 + 3*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p51*p57*p61*p6
3*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p47*p50


```

*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*
p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*
p100*p102*p103*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60
*p62*p64*p73*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31
+ p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26
*p100*p102*p103*p104*p28*p30*p31 + 3*p11*p32*p44*p48*p50*p57*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p
50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p3
2*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 3*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*
p98*p27*p29 + 3*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p51*p59*p61*p63*p73*p1
3*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p51*p57*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*
p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p
32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*
p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59*p6
1*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48
*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p9
6*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77
*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*
p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p4
8*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11
*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*
p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p7
7*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63
*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11*p32*p44*p48*p51*p59*
p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p
48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29)/p48/p
104/p93/p67/p60/p103/p57/p58/p102/p51/p49/p100/p46/p99/p13/p11/p2
9/p96/p73/(p63 + p64)/(p32 + p33)/(p27 + p28)/(p45 + p76)
N[58,11] = p98
N[59,11] = 1
N[60, 3] = (p69*p54*p52*p101*p61*p78*p86*p80*p50*p83*p59 + p69*p54*p52*p101*
p61*p78*p86*p80*p50*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80*p5
0*p57*p83 + p69*p54*p52*p101*p61*p78*p86*p80*p50*p68*p59 + p69*p5
4*p52*p101*p61*p78*p86*p80*p51*p83*p59 + p69*p54*p52*p101*p61*p78
*p86*p80*p51*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80*p51*p57*p
83 + p69*p54*p52*p101*p61*p78*p86*p80*p51*p68*p59 + p83*p67*p60*p
103*p57*p58*p102*p51*p49*p100*p54*p79*p80 + p83*p67*p60*p103*p57*
p58*p102*p51*p49*p100*p53*p79*p80 + p83*p67*p60*p103*p57*p58*p102
*p51*p49*p100*p53*p79*p70 + p83*p67*p60*p103*p57*p58*p102*p51*p49
*p100*p53*p69*p93*p80 + p83*p67*p60*p103*p57*p58*p102*p51*p49*p10
0*p54*p79*p70 + p83*p67*p60*p103*p57*p58*p102*p51*p49*p100*p54*p6
9*p93*p80)/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p49
/p51/p102/p58/p57/p103/p60/p67
N[60,12] = p93
N[61,12] = 1
N[62, 3] = p52*p86*p78*p61*p54*(p68 + p83)*(p57 + p59)*(p50 + p51)*p101/p93/
(p53 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100
N[62,13] = p101
N[63,13] = 1
N[64, 1] = p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21
+ p22)
N[64,14] = p91
N[65,14] = 1
N[66, 1] = p82*(p18 + p19)/p17/p89
N[66,15] = p92
N[67,15] = 1
N[68, 1] = p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24

```

```

+ p25)
N[68,16] = p94
N[69,16] = 1
N[70, 1] = (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*p
16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*p
93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13
*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93
+ p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p1
8*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*
p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p
22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)*(p7 + p
8)*p71*p88*p4*(p85*p2 + p85*p3 + p1*p87*p3)/p87/p1/(p5 + p71)/p3/
p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)
N[70, 3] = -(p12 + p13)*(p68 + p83)*p64*p62*p90*p9*p72*(p7 + p8)*p71*p88*p4*
(p85*p2 + p85*p3 + p1*p87*p3)/p89/p87/p1/(p5 + p71)/p3/p6/p11/p13
/p67/p93/(p63 + p64)/p8/(p10 + p72)
N[71, 3] = p61*p78*p86*(p68 + p83)*(p57 + p59)/p103/p60/p67/p93/p57/p58/p102
N[71,17] = p100
N[72,17] = 1

```

And all other elements in N are zero.

Let $\bar{y} = N*q$, where q is given by, where q is given by

```

q[ 1] = q1
q[ 2] = q2
q[ 3] = q3
q[ 4] = q4
q[ 5] = q5
q[ 6] = q6
q[ 7] = q7
q[ 8] = q8
q[ 9] = q9
q[10] = q10
q[11] = q11
q[12] = q12
q[13] = q13
q[14] = q14
q[15] = q15
q[16] = q16
q[17] = q17

```

This gives

```

ybar[ 1] = (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*p
16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*p
93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13
*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93
+ p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p1
8*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*
p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p
22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)*(p7 + p
8)*p71*p88*p4*(p2 + p3)/p87/p1/(p5 + p71)/p3/p6/p11/p13/p14/p16/p
17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 - (p68 + p83)*(p12
+ p13)*p64*p62*p90*p9*p72*(p7 + p8)*p71*p88*p4*(p2 + p3)/p89/p87
/p1/(p5 + p71)/p3/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q
3

ybar[ 2] = p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p2
2 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*
p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10
*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p1
6*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 +
p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p
20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*
p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91
*p92*p72*p21)/(p5 + p71)/p3/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/
(p21 + p22)/p8/(p10 + p72)*q1 - p4*p88*p71*(p7 + p8)*p72*p9*p90*p

```

$$62*p64*(p68 + p83)*(p12 + p13)/p89/(p5 + p71)/p3/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q3$$

$$\begin{aligned} \text{ybar}[3] = & (p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11 \\ & *p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20 \\ & *p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72* \\ & p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p \\ & 22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90* \\ & p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82* \\ & p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15 \\ & *p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p2 \\ & 1)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72) \\ &)*q1 - (p7 + p8)*p72*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p89/p \\ & 6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q3 \end{aligned}$$

$$\begin{aligned} \text{ybar}[4] = & (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*p \\ & 16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*p \\ & 93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13 \\ & *p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93 \\ & + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p1 \\ & 8*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72* \\ & p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p \\ & 22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)*(p7 + p \\ & 8)*p4*p88/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + \\ & p22)/p8/(p10 + p72)*q1 - (p68 + p83)*(p12 + p13)*p64*p62*p90*p9*p \\ & 72*(p7 + p8)*p4*p88/p89/(p5 + p71)/p6/p11/p13/p67/p93/(p63 + p64) \\ & /p8/(p10 + p72)*q3 \end{aligned}$$

$$\begin{aligned} \text{ybar}[5] = & (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*p \\ & 16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*p \\ & 93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13 \\ & *p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93 \\ & + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p1 \\ & 8*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72* \\ & p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p \\ & 22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)/p11/p13 \\ & /p14/p16/p17/p89/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 - p72*p9*p \\ & 90*p62*p64*(p68 + p83)*(p12 + p13)/p11/p13/p67/p93/(p63 + p64)/p8 \\ & /(p10 + p72)*q3 \end{aligned}$$

$$\begin{aligned} \text{ybar}[6] = & (p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p21 + p22)/p \\ & 92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12 + p13)*(p68 + p83)*p62*p \\ & 64/(p63 + p64)/p93/p67/p13/p11*q3 \end{aligned}$$

$$\begin{aligned} \text{ybar}[7] = & (p18 + p19)*(p15 + p16)*p93*p82*p22*p20*(p12 + p13)*p9*p90/(p10 + \\ & p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p68 + p83) \\ &)*p64*p62*(p12 + p13)*p9*p90/(p10 + p72)/(p63 + p64)/p93/p67/p13/ \\ & p11*q3 \end{aligned}$$

$$\begin{aligned} \text{ybar}[8] = & p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p13/p14/p16/p17/p89/p92/(\\ & p21 + p22)*q1 - (p68 + p83)*p62*p64*p91/p13/p67/p93/(p63 + p64)*q \\ & 3 \end{aligned}$$

$$\begin{aligned} \text{ybar}[9] = & (p15 + p16)*p82*(p18 + p19)/p17/p89/p16/p14/p92*q1 \\ \text{ybar}[10] = & p82*(p18 + p19)/p17/p89/p16*q1 \\ \text{ybar}[11] = & (p18 + p19)/p17/p89*q1 \\ \text{ybar}[12] = & q1 \\ \text{ybar}[13] = & p20*p93*p82*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21 + p2 \\ & 2)*q1 \\ \text{ybar}[14] = & p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24 + p2 \\ & 5)*q1 \\ \text{ybar}[15] = & p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/p84/(\end{aligned}$$

```

p24 + p25)*q1

ybar[16] = (p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p26*p95/(p27
+ p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p68 + p8
3)*(p12 + p13)*p64*p62*p26*p95/(p63 + p64)/(p27 + p28)/p93/p67/p1
3/p11*q3

ybar[17] = (p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p95*p28*p26*(
p30 + p73)/p96/p29/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/p1
6/p14/p13/p11*q1 - (p68 + p83)*(p12 + p13)*p64*p62*p95*p28*p26*(p
30 + p73)/p96/p29/(p63 + p64)/(p27 + p28)/p93/p73/p67/p13/p11*q3

ybar[18] = p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(
p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/p16/p14/p13/p11*q1 - p
26*p28*p95*p62*p64*(p68 + p83)*(p12 + p13)/(p63 + p64)/(p27 + p28
)/p93/p73/p67/p13/p11*q3

ybar[19] = (p30 + p73)*(p18 + p19)*(p15 + p16)*(p12 + p13)*p93*p82*p22*p20*p
97*p95*p31*p28*p26/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/p92/p9
1/p89/p73/p29/p17/p16/p14/p13/p11*q1 - (p68 + p83)*(p30 + p73)*(p
12 + p13)*p64*p62*p97*p95*p31*p28*p26/(p63 + p64)/(p32 + p33)/(p2
7 + p28)/p96/p93/p73/p67/p29/p13/p11*q3

ybar[20] = p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p18 + p19)*(p15 + p16)*(
p30 + p73)*(p104*p98*p74*p36 + p35*p74 + p35*p37)*(p12 + p13)/p11
/p13/p14/p16/p17/p29/p34/p36/p73/p74/p89/p91/p92/p96/p98/p104/(p1
2 + p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p34*p35/p36/p74*p75/p98/p
104*(p37 + p74)*q2 - (p68 + p83)*(4*p11*p33*p35*p46*p48*p50*p59*p
61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p3
5*p46*p48*p50*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p33*p35*p46*p48*p50*p59*p61*p63*p13*p73*p74*p76*p77*
p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p46*p48*p50*p59*p61*p63*p13*p
64*p73*p74*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p46*p4
8*p50*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p33*p35*p46*p48*p50*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*
p96*p99*p28*p29 + 4*p11*p33*p35*p46*p48*p50*p57*p61*p63*p13*p73*p
74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p5
1*p59*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33
*p35*p45*p46*p48*p51*p59*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*
p27*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p59*p61*p63*p13*p73*p74*p
77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p59*p6
1*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45
*p46*p48*p51*p57*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p33*p35*p45*p46*p48*p51*p57*p61*p13*p64*p73*p74*p77*p78*p
86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p57*p61*p63*p1
3*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48
*p51*p57*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
p33*p35*p45*p46*p48*p50*p59*p61*p13*p64*p73*p74*p77*p78*p86*p96*p
99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p59*p61*p13*p64*p73*p7
4*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p59
*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*
p45*p46*p48*p50*p59*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p
29 + 4*p11*p33*p35*p45*p46*p48*p50*p57*p61*p13*p64*p73*p74*p77*p7
8*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p57*p61*p13
*p64*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*
p48*p50*p57*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p
11*p33*p35*p45*p46*p48*p50*p57*p61*p63*p13*p73*p74*p77*p78*p86*p9
6*p99*p27*p29 + 4*p11*p33*p35*p44*p48*p51*p59*p61*p13*p64*p73*p74
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p48*p51*p59*
p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p
35*p44*p48*p51*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p2
8*p29 + 4*p11*p33*p35*p44*p48*p51*p59*p61*p63*p13*p73*p74*p76*p77
*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p48*p51*p57*p61*p13*
p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p
48*p51*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p33*p35*p44*p48*p51*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86
*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p48*p51*p57*p61*p63*p13*p73*
p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p48*p50*p

```

37

38

39

44*p47*p50*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p27*p2
9 + 4*p11*p32*p35*p44*p47*p50*p57*p61*p63*p13*p73*p74*p76*p77*p78
*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p44*p47*p50*p57*p61*p63*p13*
p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p46*p
48*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p1
1*p32*p35*p37*p46*p48*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96
*p99*p27*p29 + 4*p11*p32*p35*p37*p46*p48*p51*p59*p61*p63*p13*p73*
p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p46*p48*p51*p
59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p3
5*p37*p46*p48*p51*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p32*p35*p37*p46*p48*p51*p57*p61*p13*p64*p73*p76*p77*
p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p46*p48*p51*p57*p61*p
63*p13*p73*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p4
6*p48*p51*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p32*p35*p37*p46*p48*p50*p59*p61*p13*p64*p73*p76*p77*p78*p86*
p96*p99*p28*p29 + 4*p11*p32*p35*p37*p46*p48*p50*p59*p61*p13*p64*p
73*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p46*p48*p5
0*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32
*p35*p37*p46*p48*p50*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p99*
p27*p29 + 4*p11*p32*p35*p37*p46*p48*p50*p57*p61*p13*p64*p73*p76*p
77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p46*p48*p50*p57*p6
1*p13*p64*p73*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37
*p46*p48*p50*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p32*p35*p37*p46*p48*p50*p57*p61*p63*p13*p73*p76*p77*p78*p
86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p51*p59*p61*p1
3*p64*p73*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p45*p46
*p48*p51*p59*p61*p13*p64*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
p32*p35*p37*p45*p46*p48*p51*p59*p61*p63*p13*p73*p77*p78*p86*p96*p
99*p28*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p51*p59*p61*p63*p13*p7
3*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p51
*p57*p61*p13*p64*p73*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*
p37*p45*p46*p48*p51*p57*p61*p13*p64*p73*p77*p78*p86*p96*p99*p27*p
29 + 4*p11*p32*p35*p37*p45*p46*p48*p51*p57*p61*p63*p13*p73*p77*p7
8*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p51*p57*p61
*p63*p13*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p45*
p46*p48*p50*p59*p61*p13*p64*p73*p77*p78*p86*p96*p99*p28*p29 + 4*p
11*p32*p35*p37*p45*p46*p48*p50*p59*p61*p13*p64*p73*p77*p78*p86*p9
6*p99*p27*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p50*p59*p61*p63*p13
*p73*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p45*p46*p48*
p50*p59*p61*p63*p13*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p
35*p37*p45*p46*p48*p50*p57*p61*p13*p64*p73*p77*p78*p86*p96*p99*p2
8*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p50*p57*p61*p13*p64*p73*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p50*p57*
p61*p63*p13*p73*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p
45*p46*p48*p50*p57*p61*p63*p13*p73*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p32*p35*p37*p44*p48*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86
*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p48*p51*p59*p61*p13*p64*
p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p48*p
51*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p3
2*p35*p37*p44*p48*p51*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98
*p27*p29 + 4*p11*p32*p35*p37*p44*p48*p51*p57*p61*p13*p64*p73*p76*
p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p48*p51*p57*p
61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p3
7*p44*p48*p51*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p32*p35*p37*p44*p48*p51*p57*p61*p63*p13*p73*p76*p77*p78*
p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p48*p50*p59*p61*p13*p
64*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p4
8*p50*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p32*p35*p37*p44*p48*p50*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*
p98*p28*p29 + 4*p11*p32*p35*p37*p44*p48*p50*p59*p61*p63*p13*p73*p
76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p48*p50*p5
7*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35
*p37*p44*p48*p50*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*
p29 + 4*p11*p32*p35*p37*p44*p48*p50*p57*p61*p63*p13*p73*p76*p77*p
78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p48*p50*p57*p61*p6
3*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44
*p47*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*
p11*p32*p35*p37*p44*p47*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86*p

$$\begin{aligned}
& 96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p47*p51*p59*p61*p63*p13*p7 \\
& 3*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p47*p51 \\
& *p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32* \\
& p35*p37*p44*p47*p51*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p \\
& 28*p29 + 4*p11*p32*p35*p37*p44*p47*p51*p57*p61*p13*p64*p73*p76*p7 \\
& 7*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p47*p51*p57*p61 \\
& *p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37* \\
& p44*p47*p51*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + \\
& 4*p11*p32*p35*p37*p44*p47*p50*p59*p61*p13*p64*p73*p76*p77*p78*p8 \\
& 6*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p47*p50*p59*p61*p13*p64 \\
& *p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p47* \\
& p50*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p \\
& 32*p35*p37*p44*p47*p50*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p9 \\
& 8*p27*p29 + 4*p11*p32*p35*p37*p44*p47*p50*p57*p61*p13*p64*p73*p76 \\
& *p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p47*p50*p57* \\
& p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p \\
& 37*p44*p47*p50*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p2 \\
& 9 + 4*p11*p32*p35*p37*p44*p47*p50*p57*p61*p63*p13*p73*p76*p77*p78 \\
& *p86*p96*p98*p27*p29 + p33*p35*p46*p48*p49*p51*p57*p58*p60*p62*p1 \\
& 3*p64*p74*p76*p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p \\
& 33*p35*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p74*p76*p95*p2 \\
& 6*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p35*p46*p48*p12*p49*p \\
& 51*p57*p58*p60*p62*p64*p74*p76*p95*p26*p97*p99*p100*p102*p103*p10 \\
& 4*p28*p30*p31 + p33*p35*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p \\
& 73*p74*p76*p95*p26*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p35* \\
& p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p74*p95*p26*p97*p99*p \\
& 100*p102*p103*p104*p28*p30*p31 + p33*p35*p45*p46*p48*p49*p51*p57* \\
& p58*p60*p62*p13*p64*p73*p74*p95*p26*p97*p99*p100*p102*p103*p104*p \\
& 28*p31 + p33*p35*p45*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p74* \\
& p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p33*p35*p45*p46 \\
& *p48*p12*p49*p51*p57*p58*p60*p62*p64*p73*p74*p95*p26*p97*p99*p100 \\
& *p102*p103*p104*p28*p31 + p33*p35*p37*p46*p48*p49*p51*p57*p58*p60 \\
& *p62*p13*p64*p76*p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 \\
& + p33*p35*p37*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p76*p95 \\
& *p26*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p35*p37*p46*p48*p1 \\
& 2*p49*p51*p57*p58*p60*p62*p64*p76*p95*p26*p97*p99*p100*p102*p103* \\
& p104*p28*p30*p31 + p33*p35*p37*p46*p48*p12*p49*p51*p57*p58*p60*p6 \\
& 2*p64*p73*p76*p95*p26*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p \\
& 35*p37*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p95*p26*p97*p9 \\
& 9*p100*p102*p103*p104*p28*p30*p31 + p33*p35*p37*p45*p46*p48*p49*p \\
& 51*p57*p58*p60*p62*p13*p64*p73*p95*p26*p97*p99*p100*p102*p103*p10 \\
& 4*p28*p31 + p33*p35*p37*p45*p46*p48*p12*p49*p51*p57*p58*p60*p62*p \\
& 64*p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p33*p35*p37* \\
& p45*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p73*p95*p26*p97*p99*p \\
& 100*p102*p103*p104*p28*p31 + p33*p36*p46*p48*p49*p51*p57*p58*p60* \\
& p62*p13*p64*p74*p76*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28 \\
& *p30*p31 + p33*p36*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p7 \\
& 4*p76*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p31 + p33*p36 \\
& *p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p74*p76*p95*p26*p97*p98* \\
& p99*p100*p102*p103*p104^2*p28*p30*p31 + p33*p36*p46*p48*p12*p49*p \\
& 51*p57*p58*p60*p62*p64*p73*p74*p76*p95*p26*p97*p98*p99*p100*p102* \\
& p103*p104^2*p28*p31 + p33*p36*p45*p46*p48*p49*p51*p57*p58*p60*p62 \\
& *p13*p64*p74*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p30*p3 \\
& 1 + p33*p36*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p74*p \\
& 95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p31 + p33*p36*p45*p4 \\
& 6*p48*p12*p49*p51*p57*p58*p60*p62*p64*p74*p95*p26*p97*p98*p99*p10 \\
& 0*p102*p103*p104^2*p28*p30*p31 + p33*p36*p45*p46*p48*p12*p49*p51* \\
& p57*p58*p60*p62*p64*p73*p74*p95*p26*p97*p98*p99*p100*p102*p103*p1 \\
& 04^2*p28*p31)/p104^2/p60/p103/p57/p58/p102/p51/p49/p100/p48/p46/p \\
& 99/p67/p93/p13/p11/p29/p96/p73/p74/(p63 + p64)/(p32 + p33)/(p27 + \\
& p28)/(p45 + p76)/p36/p98/p34*q3
\end{aligned}$$

$$\begin{aligned}
\text{ybar}[21] = & p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p30 + p73)*(p18 + p19)*(\\
& p15 + p16)*(p12 + p13)*(p37 + p74)/p11/p13/p14/p16/p17/p29/p36/p7 \\
& 3/p74/p89/p91/p92/p96/p98/p104/(p32 + p33)/(p27 + p28)/(p21 + p22 \\
&)*q1 - 2/p36/p74*p75/p98/p104*(p37 + p74)*q2 - (p68 + p83)*(p33*p \\
& 46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97*p99*p26*p1 \\
& 00*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p
\end{aligned}$$

62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 + p33*
p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p95*p97*p99*p26*p
100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*
p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 + p33
*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p95*p97*p99*p26*
p100*p102*p103*p104*p28*p31 + 4*p11*p33*p44*p47*p50*p59*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p5
9*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44
*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*
p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p
27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p63*
p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p
59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p4
4*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*
p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64
*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*
p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p
46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99
*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*
p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p
13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p6
1*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48
*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*
p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p9
9*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78
*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*
p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p5
0*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33
*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*
p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p7
8*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73
*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*
p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p
48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p3
3*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*
p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p
78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p1
3*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*
p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96
*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*
p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p6
1*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48
*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p
29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p9
6*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73*
p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p50*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p4
8*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*
p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p98*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p13*p76*p7
7*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p73

*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*
p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p
46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p1
1*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28
*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*
p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p64*p7
3*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p59
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*
p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p
11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p2
8*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p64*p73*p13*p76*
p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p45*p46*p48*p5
1*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45
*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p8
6*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*
p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p48*p51*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p4
4*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4
*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*
p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*
p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p
44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*
p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p6
4*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51
*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*
p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9
8*p28*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*
p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p5
0*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32
*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p
99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p7
8*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p63*p73
*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*
p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p47*p
51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p3
3*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*
p98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p64*p73*p1
3*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p59*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48*p49*p5
1*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104
*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p7
6*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p46*p48*p49*p
51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p102*p103*p10
4*p28*p30*p31 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*
p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p4
7*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*
p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p

$$\begin{aligned}
 & 96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p64*p73*p13*p76*p7 \\
 & 7*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p64*p73 \\
 & *p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p57* \\
 & p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p \\
 & 48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p1 \\
 & 1*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28 \\
 & *p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86* \\
 & p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p64*p73*p13*p76*p \\
 & 77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p64*p7 \\
 & 3*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59 \\
 & *p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46* \\
 & p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p \\
 & 11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p2 \\
 & 8*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86* \\
 & *p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p64*p73*p13*p76* \\
 & p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p64*p \\
 & 73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p5 \\
 & 0*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45 \\
 & *p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4* \\
 & p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p \\
 & 28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p8 \\
 & 6*p96*p99*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76 \\
 & *p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64* \\
 & p73*p13*p76*p77*p78*p86*p96*p98*p27*p29)*(p37 + p74)/p98/p36/(p63 \\
 & + p64)/(p45 + p76)/(p32 + p33)/(p27 + p28)/p74/p73/p96/p29/p11/p \\
 & 13/p93/p67/p99/p46/p48/p100/p49/p51/p102/p58/p57/p103/p60/p104^2* \\
 & q3
 \end{aligned}$$

$$\begin{aligned}
 \text{ybar}[22] = & (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*p \\
 & 33*p31*p28*p26*p22*p20/p11/p13/p14/p16/p17/p29/p73/p74/p89/p91/p9 \\
 & 2/p96/(p32 + p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p74*p75*q2 - (p6 \\
 & 8 + p83)*(p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95 \\
 & *p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p5 \\
 & 1*p57*p58*p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28 \\
 & *p30*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p9 \\
 & 5*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p \\
 & 51*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p104*p2 \\
 & 8*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p \\
 & 95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p11*p33*p44*p47*p5 \\
 & 0*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33 \\
 & *p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 \\
 & + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p \\
 & 98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p7 \\
 & 8*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*p73*p13 \\
 & *p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59*p61* \\
 & p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p \\
 & 51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p3 \\
 & 3*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 \\
 & + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96* \\
 & p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p \\
 & 78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p73*p1 \\
 & 3*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61 \\
 & *p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48* \\
 & p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p \\
 & 32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p2 \\
 & 9 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96 \\
 & *p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77* \\
 & p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p \\
 & 73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p5 \\
 & 7*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46 \\
 & *p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11* \\
 & p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p \\
 & 29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p9 \\
 & 6*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77* \\
 & *p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64* \\
 & p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p \\
 & 59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p4 \\
 & 8*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11
 \end{aligned}$$

*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*
p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p13*p76*p7
7*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64
*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*
p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p
46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p1
1*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27
*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*
p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p
77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p6
3*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*
p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p
11*p33*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p2
7*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*
p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p5
9*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46
*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*
p11*p33*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p
27*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*
p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p4
4*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p32*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*
p27*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*
p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p
45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99
*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*
p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*
p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p6
4*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51
*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*
p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*
p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p5
0*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32
*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*
p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p7
8*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73
*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*
p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p
48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p3
3*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*
p98*p27*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p64*p73*p1
3*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p59*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*
p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p
33*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p2
9 + 4*p11*p33*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*
p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p6
1*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47

$$\begin{aligned}
 & *p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11* \\
 & p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p \\
 & 29 + 4*p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p9 \\
 & 6*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77 \\
 & *p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p63*p73* \\
 & p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p57*p \\
 & 61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p4 \\
 & 7*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11 \\
 & *p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28* \\
 & p29 + 4*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p \\
 & 96*p98*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p7 \\
 & 7*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64 \\
 & *p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50* \\
 & p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p \\
 & 46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p1 \\
 & 1*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28 \\
 & *p29 + 4*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86* \\
 & p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p \\
 & 77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p7 \\
 & 3*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p59 \\
 & *p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44* \\
 & p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33 \\
 & *p46*p48*p49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100 \\
 & *p102*p103*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62 \\
 & *p64*p73*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p3 \\
 & 3*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p10 \\
 & 0*p102*p103*p104*p28*p30*p31 + 4*p11*p32*p44*p48*p50*p57*p61*p63* \\
 & p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p \\
 & 57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p4 \\
 & 4*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4 \\
 & *p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98* \\
 & p27*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p \\
 & 86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p7 \\
 & 6*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p64 \\
 & *p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51* \\
 & p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p \\
 & 46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + \\
 & 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99 \\
 & *p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78* \\
 & p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p \\
 & 76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p6 \\
 & 4*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50 \\
 & *p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32* \\
 & p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + \\
 & 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9 \\
 & 9*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78 \\
 & *p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13* \\
 & p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p \\
 & 64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p5 \\
 & 1*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32 \\
 & *p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 \\
 & + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p \\
 & 99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p7 \\
 & 8*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73 \\
 & *p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61* \\
 & p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p \\
 & 51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29)/(p63 + p6 \\
 & 4)/(p45 + p76)/(p32 + p33)/(p27 + p28)/p74/p73/p96/p29/p11/p13/p9 \\
 & 3/p67/p99/p46/p48/p100/p49/p51/p102/p58/p57/p103/p60/p104*q3
 \end{aligned}$$

ybar[23] = (p41 + p75)/p40/p104/p98*q2

ybar[24] = q2

$$\text{ybar}[25] = \frac{p77*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)*(p47 + p48)/p99/p46/p100/p49/p51/p102/p58/p57/p103/p60/p67/p93/p104^2/p48*q3}{1}$$

$$\text{ybar}[26] = \frac{p44*p98*(p47 + p48)*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p}{1}$$

```

61*p77/p48/p104/p93/p67/p60/p103/p57/p58/p102/p51/p49/p100/p46/p9
9/(p45 + p76)*q3

ybar[27] = (p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61*p77/p100/p49/p51/
p102/p58/p57/p103/p60/p67/p93/p104/p48*q3

ybar[28] = (p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61/p104/p93/p67/p60/
p103/p57/p58/p102/p51/p49/p100*q3

ybar[29] = p61*p78*p86*(p68 + p83)*(p57 + p59)/p67/p93/p60/p103/p57/p58/p102
/p51*q3

ybar[30] = p61*p78*(p68 + p83)*(p57 + p59)*(p56 + p86)/p67/p93/p60/p103/p57/
p58/p102/p55*q3

ybar[31] = p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p93/(p53
+ p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*q3

ybar[32] = (p79*p80 + p66*p70 + p66*p80 + p79*p70 + p69*p93*p80)*p54*p52*p10
1*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p67/p60/p103/p5
7/p58/p102/p51/p49/p100/(p79*p80 + p79*p70 + p69*p93*p80)/(p53 +
p54)/p93/p65*q3

ybar[33] = p78*(p57 + p59)*(p68 + p83)*p61/p103/p60/p67/p93/p57/p58/p102*q3

ybar[34] = p78*(p68 + p83)*p61/p103/p60/p67/p93/p57*q3

ybar[35] = (p68 + p83)*p61/p103/p60/p67/p93*q3

ybar[36] = (p68 + p83)/p67/p93*q3

ybar[37] = p62*p91*(p68 + p83)/p67/p93/(p63 + p64)*q3

ybar[38] = (p70 + p80)*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50
+ p51)/p93/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p4
9/p51/p102/p58/p57/p103/p60/p67*q3

ybar[39] = q3

ybar[40] = p69*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/
(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p49/p51/p102/p
58/p57/p103/p60/p67*q3

ybar[41] = p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/p81/(
p21 + p22)*q1

ybar[42] = (p41*p39 + p104*p40*p98*p75 + p75*p39)/c1/k38/p98/p40/p104*q2 + 2
*p77*p86*p78*p61*(p57 + p59)*(p50 + p51)*(p68 + p83)*(p46*p99*p76
*p48 + p46*p99*p45*p48 + p98*p44*p76*p48 + p98*p44*p76*p47)/p104/
(p45 + p76)/p67/p60/p103/p57/p58/p102/p51/p49/p100/p93/p48/p46/p9
9/k38/c1*q3

ybar[43] = p77*p86*p78*p61*(p50 + p51)*(p68 + p83)*(p57 + p59)*(p46*p104*p99
*p45*p48 + p43*p45*p48 + p44*p98*p104*p76*p48 + p46*p104*p99*p76*
p48 + p44*p98*p104*p76*p47 + p43*p76*p48 + p43*p45*p47 + p43*p76*
p47)/c1/k42/p46/p48/p49/p51/p57/p58/p60/p67/p93/p99/p100/p102/p10
3/p104^2/(p45 + p76)*q3

ybar[44] = p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p2
2 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*
p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10
*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p1
6*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 +
p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p
20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*
p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91
*p92*p72*p21)/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p2
1 + p22)/p8/(p10 + p72)*q1 - (p68 + p83)*(p12 + p13)*(p7 + p8)*p4

```

```

                *p88*p71*p72*p9*p90*p62*p64/p89/(p5 + p71)/p6/p11/p13/p67/p93/(p6
                3 + p64)/p8/(p10 + p72)*q3 + p87*q4

ybar[45] = q4

ybar[46] = p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p2
2 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*
p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10
*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p1
6*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 +
p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p
20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*
p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91
*p92*p72*p21)/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p2
1 + p22)/p8/(p10 + p72)*q1 - (p68 + p83)*(p12 + p13)*(p7 + p8)*p4
*p88*p71*p72*p9*p90*p62*p64/p89/(p5 + p71)/p6/p11/p13/p67/p93/(p6
3 + p64)/p8/(p10 + p72)*q3 + p88*q5

ybar[47] = q5

ybar[48] = (p15 + p16)*(p18 + p19)*(p12 + p13)*p72*p9*p90*p20*p22*p82*p93/(p
10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12 +
p13)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p67/p93/
(p63 + p64)*q3 + p89*q6

ybar[49] = q6

ybar[50] = (p15 + p16)*(p18 + p19)*(p12 + p13)*p72*p9*p90*p20*p22*p82*p93/(p
10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12 +
p13)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p67/p93/
(p63 + p64)*q3 + p90*q7

ybar[51] = q7

ybar[52] = p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(
p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12
+ p13)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p28)/p9
3/p67/p13/p11*q3 + p95*q8

ybar[53] = q8

ybar[54] = p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(
p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12
+ p13)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p28)/p9
3/p67/p13/p11*q3 + p96*q9

ybar[55] = q9

ybar[56] = (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*p
33*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/p9
2/p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 - p97*(p68 + p83)*(p30 +
p73)*(p12 + p13)*p26*p28*p31*p33*p62*p64*p95/p11/p13/p67/p73/p93
/(p63 + p64)/(p32 + p33)/(p27 + p28)/p29/p96*q3 + p97*q10

ybar[57] = q10

ybar[58] = (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*p
33*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/p9
2/p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 - p75*q2 - (p68 + p83)*(
p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97*p99*p
26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p57*p58*
p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 +
p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p95*p97*p99*
p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p12*p57
*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31
+ p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p95*p97*p99
*p26*p100*p102*p103*p104*p28*p31 + 3*p11*p33*p44*p47*p50*p59*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p

```


64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51
1*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32
*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29
+ 3*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
98*p28*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p7
8*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p50*p59*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p50*p59*p61*
p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p45*p46*p
48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
2*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*
p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p
78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p7
3*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57
*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11*p33*p44*p48*
p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p
33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p2
9 + 3*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p28*p29 + 3*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*
p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p50*p59*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p50*p59*p6
1*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48
*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*
p33*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 3*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p9
6*p98*p28*p29 + 3*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p47*p51*p59*p61*p64*p73*
p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p51*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p4
7*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11
*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*
p29 + 3*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 3*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p7
7*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p50*p57*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p50*p57*
p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p
47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p1
1*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27
*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*
p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p
77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p6
3*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50
*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11*p33*p44*
p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p
11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
7*p29 + 3*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*
p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p47*p50*p59*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p5
9*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p33*p46*p48*p
49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p103
*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p
13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p46*p48*
p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p102*p10
3*p104*p28*p30*p31 + 3*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p50*p57*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p51*
p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p
44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
3*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 3*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*
p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p6
4*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51
*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*
p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9
9*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78

```

      *p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p64*p73*p13*
      p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p
      64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p5
      0*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32
      *p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29
      + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p
      99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p7
      8*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p64*p73*p13
      *p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p59*p61*
      p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p
      48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
      2*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29
      + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*
      p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p
      78*p86*p96*p99*p27*p29 + 3*p11*p32*p44*p48*p51*p59*p61*p64*p73*p1
      3*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p51*p59*p61
      *p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29)/p48/p104/p93/p67/p6
      0/p103/p57/p58/p102/p51/p49/p100/p46/p99/p13/p11/p29/p96/p73/(p63
      + p64)/(p32 + p33)/(p27 + p28)/(p45 + p76)*q3 + p98*q11

ybar[59] = q11

ybar[60] = (p69*p54*p52*p101*p61*p78*p86*p80*p50*p83*p59 + p69*p54*p52*p101*
p61*p78*p86*p80*p50*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80*p5
0*p57*p83 + p69*p54*p52*p101*p61*p78*p86*p80*p50*p68*p59 + p69*p5
4*p52*p101*p61*p78*p86*p80*p51*p83*p59 + p69*p54*p52*p101*p61*p78
*p86*p80*p51*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80*p51*p57*p
83 + p69*p54*p52*p101*p61*p78*p86*p80*p51*p68*p59 + p83*p67*p60*p
103*p57*p58*p102*p51*p49*p100*p54*p79*p80 + p83*p67*p60*p103*p57*
p58*p102*p51*p49*p100*p53*p79*p80 + p83*p67*p60*p103*p57*p58*p102*
p51*p49*p100*p53*p79*p70 + p83*p67*p60*p103*p57*p58*p102*p51*p49*
p100*p53*p69*p93*p80 + p83*p67*p60*p103*p57*p58*p102*p51*p49*p10
0*p54*p79*p70 + p83*p67*p60*p103*p57*p58*p102*p51*p49*p100*p54*p6
9*p93*p80)/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p49
/p51/p102/p58/p57/p103/p60/p67*q3 + p93*q12

ybar[61] = q12

ybar[62] = p52*p86*p78*p61*p54*(p68 + p83)*(p57 + p59)*(p50 + p51)*p101/p93/
(p53 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*q3 + p101*q13

ybar[63] = q13

ybar[64] = p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21
+ p22)*q1 + p91*q14

ybar[65] = q14

ybar[66] = p82*(p18 + p19)/p17/p89*q1 + p92*q15

ybar[67] = q15

ybar[68] = p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24
+ p25)*q1 + p94*q16

ybar[69] = q16

ybar[70] = (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*p
16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*p
93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13
*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93
+ p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p1
8*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*
p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p
22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)*(p7 + p
8)*p71*p88*p4*(p85*p2 + p85*p3 + p1*p87*p3)/p87/p1/(p5 + p71)/p3/
p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)*q
1 - (p12 + p13)*(p68 + p83)*p64*p62*p90*p9*p72*(p7 + p8)*p71*p88*

```

$$\frac{p_4(p_{85}p_2 + p_{85}p_3 + p_1p_{87}p_3)}{p_{89}p_{87}p_1(p_5 + p_{71})p_3p_6p_{11}p_{13}p_{67}p_{93}(p_{63} + p_{64})p_8(p_{10} + p_{72})q_3}$$

$$ybar[71] = \frac{p_{61}p_{78}p_{86}(p_{68} + p_{83})(p_{57} + p_{59})}{p_{103}p_{60}p_{67}p_{93}p_{57}p_{58}p_{102}q_3 + p_{100}q_{17}}$$

$$ybar[72] = q_{17}$$

From ybar we construct the composite forward map ψ_{py} :

| | | |
|-----|-----|-----|
| k1 | --> | p1 |
| k2 | --> | p2 |
| k3 | --> | p3 |
| k4 | --> | p4 |
| k5 | --> | p5 |
| k6 | --> | p6 |
| k7 | --> | p7 |
| k8 | --> | p8 |
| k9 | --> | p9 |
| k10 | --> | p10 |
| k11 | --> | p11 |
| k12 | --> | p12 |
| k13 | --> | p13 |
| k14 | --> | p14 |
| k15 | --> | p15 |
| k16 | --> | p16 |
| k17 | --> | p17 |
| k18 | --> | p18 |
| k19 | --> | p19 |
| k20 | --> | p20 |
| k21 | --> | p21 |
| k22 | --> | p22 |
| k23 | --> | p23 |
| k24 | --> | p24 |
| k25 | --> | p25 |
| k26 | --> | p26 |
| k27 | --> | p27 |
| k28 | --> | p28 |
| k29 | --> | p29 |

| | | |
|-----|-----|-----|
| k30 | --> | p30 |
| k31 | --> | p31 |
| k32 | --> | p32 |
| k33 | --> | p33 |
| k34 | --> | p34 |
| k35 | --> | p35 |
| k36 | --> | p36 |
| k37 | --> | p37 |
| k38 | --> | p38 |
| k39 | --> | p39 |
| k40 | --> | p40 |
| k41 | --> | p41 |
| k42 | --> | p42 |
| k43 | --> | p43 |
| k44 | --> | p44 |
| k45 | --> | p45 |
| k46 | --> | p46 |
| k47 | --> | p47 |
| k48 | --> | p48 |
| k49 | --> | p49 |
| k50 | --> | p50 |
| k51 | --> | p51 |
| k52 | --> | p52 |
| k53 | --> | p53 |
| k54 | --> | p54 |
| k55 | --> | p55 |
| k56 | --> | p56 |
| k57 | --> | p57 |
| k58 | --> | p58 |
| k59 | --> | p59 |
| k60 | --> | p60 |
| k61 | --> | p61 |
| k62 | --> | p62 |
| k63 | --> | p63 |

```

k64    |-->  p64
k65    |-->  p65
k66    |-->  p66
k67    |-->  p67
k68    |-->  p68
k69    |-->  p69
k70    |-->  p70
k71    |-->  p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p
22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p1
2*p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*
p10*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p1
3*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p
93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15
*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 +
p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17
*p89*p91*p92*p72*p21)/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p9
1/p92/(p21 + p22)/p8/(p10 + p72)*q1 - (p68 + p83)*(p12 + p13)*(p
7 + p8)*p4*p88*p71*p72*p9*p90*p62*p64/p89/(p5 + p71)/p6/p11/p13/
p67/p93/(p63 + p64)/p8/(p10 + p72)*q3 + p87*q4
k72    |-->  q4
k73    |-->  p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p
22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p1
2*p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*
p10*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p1
3*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p
93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15
*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 +
p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17
*p89*p91*p92*p72*p21)/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p9
1/p92/(p21 + p22)/p8/(p10 + p72)*q1 - (p68 + p83)*(p12 + p13)*(p
7 + p8)*p4*p88*p71*p72*p9*p90*p62*p64/p89/(p5 + p71)/p6/p11/p13/
p67/p93/(p63 + p64)/p8/(p10 + p72)*q3 + p88*q5
k74    |-->  q5
k75    |-->  p71
k76    |-->  (p15 + p16)*(p18 + p19)*(p12 + p13)*p72*p9*p90*p20*p22*p82*p93/(
p10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12
+ p13)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p67/p
93/(p63 + p64)*q3 + p89*q6
k77    |-->  q6
k78    |-->  (p15 + p16)*(p18 + p19)*(p12 + p13)*p72*p9*p90*p20*p22*p82*p93/(
p10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12
+ p13)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p67/p
93/(p63 + p64)*q3 + p90*q7
k79    |-->  q7
k80    |-->  p72
k81    |-->  p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/
(p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p1
2 + p13)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p28)
/p93/p67/p13/p11*q3 + p95*q8

```

```

k82    |-->  q8

k83    |-->  p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/
          (p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p1
          2 + p13)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p28)
          /p93/p67/p13/p11*q3 + p96*q9

k84    |-->  q9

k85    |-->  p73

k86    |-->  (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*
          p33*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/
          p92/p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 - p97*(p68 + p83)*(p3
          0 + p73)*(p12 + p13)*p26*p28*p31*p33*p62*p64*p95/p11/p13/p67/p73
          /p93/(p63 + p64)/(p32 + p33)/(p27 + p28)/p29/p96*q3 + p97*q10

k87    |-->  q10

k88    |-->  (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*
          p33*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/
          p92/p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 - p75*q2 - (p68 + p83
          )*(p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97*p
          99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p57
          *p58*p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30
          *p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p95*p
          97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51
          *p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p104*p28
          *p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p
          95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 3*p11*p33*p44*p47*p
          50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p
          33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
          29 + 3*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
          96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p
          77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p51*p59*p61*p64*p
          73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p51*p
          59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p
          44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
          3*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
          98*p27*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p
          78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p64*p73*p
          13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p51*p59*p
          61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p
          48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p
          11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p
          28*p29 + 3*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p
          86*p96*p98*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p
          76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p
          61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p
          48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
          33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p
          29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p
          96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p
          77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p
          63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p
          50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p
          45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 +
          4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p
          99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p
          78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p
          13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57*p
          61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p
          48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p
          11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p
          28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p
          86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p
          13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p
          61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p
          61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p

```

56

$$\begin{aligned}
 &13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p50*p57*p \\
 &61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p \\
 &47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p \\
 &11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p \\
 &28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p \\
 &86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p63*p73*p \\
 &13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p \\
 &61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11*p33*p44*p47*p \\
 &51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p \\
 &33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p \\
 &29 + 3*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p \\
 &96*p98*p28*p29 + 3*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p \\
 &77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p47*p50*p59*p61*p64*p \\
 &73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p \\
 &59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48 \\
 &*p49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p \\
 &103*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p \\
 &73*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p46 \\
 &*p48*p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p1 \\
 &02*p103*p104*p28*p30*p31 + 3*p11*p32*p44*p48*p50*p57*p61*p63*p73 \\
 &*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p50*p57 \\
 &*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44 \\
 &*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3 \\
 &*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98 \\
 &*p27*p29 + 3*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78 \\
 &*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13 \\
 &*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p51*p57*p61 \\
 &*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47 \\
 &*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11 \\
 &*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28 \\
 &*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86 \\
 &*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76 \\
 &*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63 \\
 &*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50 \\
 &*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32 \\
 &*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 \\
 &+ 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96 \\
 &*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77 \\
 &*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73 \\
 &*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57 \\
 &*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46 \\
 &*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4 \\
 &*p11*p33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99 \\
 &*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78 \\
 &*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73 \\
 &*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57 \\
 &*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46 \\
 &*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11 \\
 &*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28 \\
 &*p29 + 3*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86 \\
 &*p96*p98*p27*p29)/p48/p104/p93/p67/p60/p103/p57/p58/p102/p51/p49 \\
 &/p100/p46/p99/p13/p11/p29/p96/p73/(p63 + p64)/(p32 + p33)/(p27 + \\
 &p28)/(p45 + p76)*q3 + p98*q11
 \end{aligned}$$

k89 |--> q11

k90 |--> p74

k91 |--> p75

k92 |--> p76

k93 |--> p77

k94 |--> p78

k95 |--> (p69*p54*p52*p101*p61*p78*p86*p80*p50*p83*p59 + p69*p54*p52*p101
 *p61*p78*p86*p80*p50*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80*

```

p50*p57*p83 + p69*p54*p52*p101*p61*p78*p86*p80*p50*p68*p59 + p69
*p54*p52*p101*p61*p78*p86*p80*p51*p83*p59 + p69*p54*p52*p101*p61
*p78*p86*p80*p51*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80*p51*
p57*p83 + p69*p54*p52*p101*p61*p78*p86*p80*p51*p68*p59 + p83*p67
*p60*p103*p57*p58*p102*p51*p49*p100*p54*p79*p80 + p83*p67*p60*p1
03*p57*p58*p102*p51*p49*p100*p53*p79*p80 + p83*p67*p60*p103*p57*
p58*p102*p51*p49*p100*p53*p79*p70 + p83*p67*p60*p103*p57*p58*p10
2*p51*p49*p100*p53*p69*p93*p80 + p83*p67*p60*p103*p57*p58*p102*p
51*p49*p100*p54*p79*p70 + p83*p67*p60*p103*p57*p58*p102*p51*p49*
p100*p54*p69*p93*p80)/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p
80)/p100/p49/p51/p102/p58/p57/p103/p60/p67*q3 + p93*q12

k96  |--> q12

k97  |--> p52*p86*p78*p61*p54*(p68 + p83)*(p57 + p59)*(p50 + p51)*p101/p93
/(p53 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*q3 + p101*q1
3

k98  |--> q13

k99  |--> p79

k100 |--> p80

k101 |--> p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21
+ p22)*q1 + p91*q14

k102 |--> q14

k103 |--> p81

k104 |--> p82*(p18 + p19)/p17/p89*q1 + p92*q15

k105 |--> q15

k106 |--> p82

k107 |--> p83

k108 |--> p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24
+ p25)*q1 + p94*q16

k109 |--> q16

k110 |--> p84

k111 |--> (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*
p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82
*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*
p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82
*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p
16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93
+ p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)
*(p7 + p8)*p71*p88*p4*(p85*p2 + p85*p3 + p1*p87*p3)/p87/p1/(p5 +
p71)/p3/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p1
0 + p72)*q1 - (p12 + p13)*(p68 + p83)*p64*p62*p90*p9*p72*(p7 + p
8)*p71*p88*p4*(p85*p2 + p85*p3 + p1*p87*p3)/p89/p87/p1/(p5 + p71
)/p3/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q3

k112 |--> p85

k113 |--> p61*p78*p86*(p68 + p83)*(p57 + p59)/p103/p60/p67/p93/p57/p58/p10
2*q3 + p100*q17

k114 |--> q17

k115 |--> p86

```

```

x1      |--> (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*
p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82
*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*
p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82
*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p
16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93
+ p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)
*(p7 + p8)*p71*p88*p4*(p2 + p3)/p87/p1/(p5 + p71)/p3/p6/p11/p13/
p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 - (p68 +
p83)*(p12 + p13)*p64*p62*p90*p9*p72*(p7 + p8)*p71*p88*p4*(p2 +
p3)/p89/p87/p1/(p5 + p71)/p3/p6/p11/p13/p67/p93/(p63 + p64)/p8/(
p10 + p72)*q3

x2      |--> p87

x3      |--> p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p
22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p1
2*p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*
p10*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p1
3*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p
93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15
*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 +
p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17
*p89*p91*p92*p72*p21)/(p5 + p71)/p3/p6/p11/p13/p14/p16/p17/p89^2
/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 - p4*p88*p71*(p7 + p8)*p7
2*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p89/(p5 + p71)/p3/p6/p1
1/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q3

x4      |--> (p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p1
1*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p
20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p
72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p
20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9
*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p2
2*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*
p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p9
2*p72*p21)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(
p10 + p72)*q1 - (p7 + p8)*p72*p9*p90*p62*p64*(p68 + p83)*(p12 +
p13)/p89/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q3

x5      |--> p88

x6      |--> (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*
p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82
*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*
p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82
*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p
16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93
+ p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)
*(p7 + p8)*p4*p88/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p91/p9
2/(p21 + p22)/p8/(p10 + p72)*q1 - (p68 + p83)*(p12 + p13)*p64*p6
2*p90*p9*p72*(p7 + p8)*p4*p88/p89/(p5 + p71)/p6/p11/p13/p67/p93/
(p63 + p64)/p8/(p10 + p72)*q3

x7      |--> p89

x8      |--> (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*
p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82
*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*
p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82
*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p
16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93
+ p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)
/p11/p13/p14/p16/p17/p89/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 -

```

```

      p72*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p11/p13/p67/p93/(p63
      + p64)/p8/(p10 + p72)*q3
x9      |--> (p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p21 + p22)/
      p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12 + p13)*(p68 + p83)*p62
      *p64/(p63 + p64)/p93/p67/p13/p11*q3
x10     |--> p90
x11     |--> (p18 + p19)*(p15 + p16)*p93*p82*p22*p20*(p12 + p13)*p9*p90/(p10
      + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p68 + p
      83)*p64*p62*(p12 + p13)*p9*p90/(p10 + p72)/(p63 + p64)/p93/p67/p
      13/p11*q3
x12     |--> p91
x13     |--> p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p13/p14/p16/p17/p89/p92/
      (p21 + p22)*q1 - (p68 + p83)*p62*p64*p91/p13/p67/p93/(p63 + p64)
      *q3
x14     |--> (p15 + p16)*p82*(p18 + p19)/p17/p89/p16/p14/p92*q1
x15     |--> p92
x16     |--> p82*(p18 + p19)/p17/p89/p16*q1
x17     |--> (p18 + p19)/p17/p89*q1
x18     |--> q1
x19     |--> p93
x20     |--> p20*p93*p82*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21 + p
      22)*q1
x21     |--> p94
x22     |--> p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24 + p
      25)*q1
x23     |--> p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/p84/
      (p24 + p25)*q1
x24     |--> p95
x25     |--> (p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p26*p95/(p27
      + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p68 +
      p83)*(p12 + p13)*p64*p62*p26*p95/(p63 + p64)/(p27 + p28)/p93/p67
      /p13/p11*q3
x26     |--> (p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p95*p28*p26*
      (p30 + p73)/p96/p29/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/
      p16/p14/p13/p11*q1 - (p68 + p83)*(p12 + p13)*p64*p62*p95*p28*p26
      *(p30 + p73)/p96/p29/(p63 + p64)/(p27 + p28)/p93/p73/p67/p13/p11
      *q3
x27     |--> p96
x28     |--> p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/
      (p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/p16/p14/p13/p11*q1 -
      p26*p28*p95*p62*p64*(p68 + p83)*(p12 + p13)/(p63 + p64)/(p27 +
      p28)/p93/p73/p67/p13/p11*q3
x29     |--> p97
x30     |--> (p30 + p73)*(p18 + p19)*(p15 + p16)*(p12 + p13)*p93*p82*p22*p20*
      p97*p95*p31*p28*p26/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/p92/
      p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 - (p68 + p83)*(p30 + p73)

```

```

*(p12 + p13)*p64*p62*p97*p95*p31*p28*p26/(p63 + p64)/(p32 + p33)
/(p27 + p28)/p96/p93/p73/p67/p29/p13/p11*q3

x31    |--> p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p18 + p19)*(p15 + p16)*
(p30 + p73)*(p104*p98*p74*p36 + p35*p74 + p35*p37)*(p12 + p13)/p
11/p13/p14/p16/p17/p29/p34/p36/p73/p74/p89/p91/p92/p96/p98/p104/
(p32 + p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p34*p35/p36/p74*p75/p
98/p104*(p37 + p74)*q2 - (p68 + p83)*(4*p11*p33*p35*p46*p48*p50*
p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
p33*p35*p46*p48*p50*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*
p99*p28*p29 + 4*p11*p33*p35*p46*p48*p50*p59*p61*p63*p13*p73*p74*
p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p46*p48*p50*p57*
p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*
p35*p46*p48*p50*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*
p27*p29 + 4*p11*p33*p35*p46*p48*p50*p57*p61*p63*p13*p73*p74*p76*
p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p46*p48*p50*p57*p61*
p63*p13*p73*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*
p45*p46*p48*p51*p59*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p28*
p29 + 4*p11*p33*p35*p45*p46*p48*p51*p59*p61*p13*p64*p73*p74*p77*
p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p59*p61*
p63*p13*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*
p46*p48*p51*p59*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p33*p35*p45*p46*p48*p51*p57*p61*p13*p64*p73*p74*p77*p78*
p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p57*p61*p13*
p64*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*
p48*p51*p57*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*
p11*p33*p35*p45*p46*p48*p51*p57*p61*p63*p13*p73*p74*p77*p78*p86*
p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p59*p61*p13*p64*
p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*
p50*p59*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
p33*p35*p45*p46*p48*p50*p59*p61*p63*p13*p73*p74*p77*p78*p86*p96*
p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p59*p61*p63*p13*p73*
p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p50*
p57*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*
p35*p45*p46*p48*p50*p57*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*
p27*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p57*p61*p63*p13*p73*p74*
p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p57*
p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*
p44*p48*p51*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*
p29 + 4*p11*p33*p35*p44*p48*p51*p59*p61*p13*p64*p73*p74*p76*p77*
p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p48*p51*p59*p61*p63*
p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*
p48*p51*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p33*p35*p44*p48*p51*p57*p61*p13*p64*p73*p74*p76*p77*p78*
p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p48*p51*p57*p61*p13*p64*
p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p48*
p51*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*
p11*p33*p35*p44*p48*p51*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*
p96*p98*p27*p29 + 4*p11*p33*p35*p44*p48*p50*p59*p61*p13*p64*p73*
p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p48*p50*
p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*
p33*p35*p44*p48*p50*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*
p98*p28*p29 + 4*p11*p33*p35*p44*p48*p50*p59*p61*p63*p13*p73*p74*
p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p48*p50*p57*
p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*
p35*p44*p48*p50*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*
p27*p29 + 4*p11*p33*p35*p44*p48*p50*p57*p61*p63*p13*p73*p74*p76*
p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p48*p50*p57*p61*
p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*
p44*p47*p51*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*
p29 + 4*p11*p33*p35*p44*p47*p51*p59*p61*p13*p64*p73*p74*p76*p77*
p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p47*p51*p59*p61*p13*
p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*
p47*p51*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p33*p35*p44*p47*p51*p57*p61*p13*p64*p73*p74*p76*p77*p78*
p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p47*p51*p57*p61*p13*p64*
p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p47*
p51*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*

```

62

63

64

65

$$\begin{aligned}
& p47*p50*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4* \\
& p11*p32*p35*p37*p44*p47*p50*p57*p61*p63*p13*p73*p76*p77*p78*p86* \\
& p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p47*p50*p57*p61*p63*p13* \\
& p73*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p35*p46*p48*p49*p51*p5 \\
& 7*p58*p60*p62*p13*p64*p74*p76*p95*p26*p97*p99*p100*p102*p103*p10 \\
& 4*p28*p30*p31 + p33*p35*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64* \\
& p73*p74*p76*p95*p26*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p3 \\
& 5*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p74*p76*p95*p26*p97*p9 \\
& 9*p100*p102*p103*p104*p28*p30*p31 + p33*p35*p46*p48*p12*p49*p51* \\
& p57*p58*p60*p62*p64*p73*p74*p76*p95*p26*p97*p99*p100*p102*p103*p \\
& 104*p28*p31 + p33*p35*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p6 \\
& 4*p74*p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p33*p35* \\
& p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p74*p95*p26*p97* \\
& p99*p100*p102*p103*p104*p28*p31 + p33*p35*p45*p46*p48*p12*p49*p5 \\
& 1*p57*p58*p60*p62*p64*p74*p95*p26*p97*p99*p100*p102*p103*p104*p2 \\
& 8*p30*p31 + p33*p35*p45*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64* \\
& p73*p74*p95*p26*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p35*p3 \\
& 7*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p76*p95*p26*p97*p99*p1 \\
& 00*p102*p103*p104*p28*p30*p31 + p33*p35*p37*p46*p48*p49*p51*p57* \\
& p58*p60*p62*p13*p64*p73*p76*p95*p26*p97*p99*p100*p102*p103*p104* \\
& p28*p31 + p33*p35*p37*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p7 \\
& 6*p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p33*p35*p37* \\
& p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p73*p76*p95*p26*p97*p99* \\
& p100*p102*p103*p104*p28*p31 + p33*p35*p37*p45*p46*p48*p49*p51*p5 \\
& 7*p58*p60*p62*p13*p64*p95*p26*p97*p99*p100*p102*p103*p104*p28*p3 \\
& 0*p31 + p33*p35*p37*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64* \\
& p73*p95*p26*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p35*p37*p4 \\
& 5*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p95*p26*p97*p99*p100*p \\
& 102*p103*p104*p28*p30*p31 + p33*p35*p37*p45*p46*p48*p12*p49*p51* \\
& p57*p58*p60*p62*p64*p73*p95*p26*p97*p99*p100*p102*p103*p104*p28* \\
& p31 + p33*p36*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p74*p76*p9 \\
& 5*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p30*p31 + p33*p36*p4 \\
& 6*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p74*p76*p95*p26*p97*p9 \\
& 8*p99*p100*p102*p103*p104^2*p28*p31 + p33*p36*p46*p48*p12*p49*p5 \\
& 1*p57*p58*p60*p62*p64*p74*p76*p95*p26*p97*p98*p99*p100*p102*p103 \\
& *p104^2*p28*p30*p31 + p33*p36*p46*p48*p12*p49*p51*p57*p58*p60*p6 \\
& 2*p64*p73*p74*p76*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28* \\
& p31 + p33*p36*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p74*p9 \\
& 5*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p30*p31 + p33*p36*p4 \\
& 5*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p74*p95*p26*p97*p9 \\
& 8*p99*p100*p102*p103*p104^2*p28*p31 + p33*p36*p45*p46*p48*p12*p4 \\
& 9*p51*p57*p58*p60*p62*p64*p74*p95*p26*p97*p98*p99*p100*p102*p103 \\
& *p104^2*p28*p30*p31 + p33*p36*p45*p46*p48*p12*p49*p51*p57*p58*p6 \\
& 0*p62*p64*p73*p74*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28* \\
& p31)/p104^2/p60/p103/p57/p58/p102/p51/p49/p100/p48/p46/p99/p67/p \\
& 93/p13/p11/p29/p96/p73/p74/(p63 + p64)/(p32 + p33)/(p27 + p28)/(\\
& p45 + p76)/p36/p98/p34*q3
\end{aligned}$$

$$\begin{aligned}
& x32 \quad | \rightarrow p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p30 + p73)*(p18 + p19)* \\
& (p15 + p16)*(p12 + p13)*(p37 + p74)/p11/p13/p14/p16/p17/p29/p36/ \\
& p73/p74/p89/p91/p92/p96/p98/p104/(p32 + p33)/(p27 + p28)/(p21 + \\
& p22)*q1 - 2/p36/p74*p75/p98/p104*(p37 + p74)*q2 - (p68 + p83)*(p \\
& 33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97*p99*p \\
& 26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p57*p58 \\
& *p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 \\
& + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p95*p97*p \\
& 99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p12 \\
& *p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30 \\
& *p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p95*p \\
& 97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p11*p33*p44*p47*p50*p \\
& 59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p \\
& 44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + \\
& 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p \\
& 98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p \\
& 78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*p73*p \\
& 13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59*p \\
& 61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p \\
& 48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p
\end{aligned}$$

11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p
27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p
63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p
51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p
32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p
29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p98*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p
63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p
51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p
45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p
73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p
59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p
46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p
11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p
63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p
50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p
77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p
64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p
50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p
45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p57*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p
48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p
11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p
27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p
63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p
50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p
29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p50*p
59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p
44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
98*p28*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p
46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p
11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p
27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p
51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p

59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p
44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p
99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p
78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p
73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p
57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p
46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p
11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p
27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p
50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p
33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p
29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p
44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p
98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p
78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p
47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p
11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p
27*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p
63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p
50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p
32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p63*p73*p13*p
77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p
63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p47*p51*p
57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p
44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48*p49
*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p103*
p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p
13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p46*p48
*p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p102*p
103*p104*p28*p30*p31 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47
*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11
*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27
*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p64
*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51
*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32
*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46
*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99
*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78

$$\begin{aligned}
 & *p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13 \\
 & *p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61 \\
 & *p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48 \\
 & *p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11 \\
 & *p33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27 \\
 & *p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86 \\
 & *p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13 \\
 & *p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61 \\
 & *p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48 \\
 & *p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32 \\
 & *p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 \\
 & + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96 \\
 & *p98*p27*p29)*(p37 + p74)/p98/p36/(p63 + p64)/(p45 + p76)/(p32 + \\
 & p33)/(p27 + p28)/p74/p73/p96/p29/p11/p13/p93/p67/p99/p46/p48/p1 \\
 & 00/p49/p51/p102/p58/p57/p103/p60/p104^2*q3
 \end{aligned}$$

x33 |--> p98

x34 |-->
$$\begin{aligned}
 & (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82* \\
 & p33*p31*p28*p26*p22*p20/p11/p13/p14/p16/p17/p29/p73/p74/p89/p91/ \\
 & p92/p96/(p32 + p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p74*p75*q2 - \\
 & (p68 + p83)*(p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76 \\
 & *p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p \\
 & 49*p51*p57*p58*p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p1 \\
 & 04*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73 \\
 & *p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p \\
 & 48*p49*p51*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p10 \\
 & 3*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62 \\
 & *p64*p73*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p11*p33 \\
 & *p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 \\
 & + 4*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96 \\
 & *p98*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p76*p77 \\
 & *p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73 \\
 & *p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59 \\
 & *p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44 \\
 & *p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4 \\
 & *p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98 \\
 & *p28*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78 \\
 & *p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13 \\
 & *p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61 \\
 & *p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48 \\
 & *p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11 \\
 & *p32*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27 \\
 & *p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86 \\
 & *p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76 \\
 & *p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63 \\
 & *p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48 \\
 & *p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33 \\
 & *p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 \\
 & + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96 \\
 & *p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77 \\
 & *p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63 \\
 & *p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51 \\
 & *p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45 \\
 & *p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4 \\
 & *p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99 \\
 & *p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78 \\
 & *p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13 \\
 & *p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61 \\
 & *p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48 \\
 & *p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11 \\
 & *p33*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27 \\
 & *p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86 \\
 & *p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13 \\
 & *p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61 \\
 & *p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48 \\
 & *p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33 \\
 & *p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29
 \end{aligned}$$

70

```

*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11
*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27
*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13
*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61
*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48
*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33
*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p59
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44
*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p
33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p
100*p102*p103*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60
*p62*p64*p73*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31
+ p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p
26*p100*p102*p103*p104*p28*p30*p31 + 4*p11*p32*p44*p48*p50*p57*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p
48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p
11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p
28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p
63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p
51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p
32*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p
46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p32*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p
48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p
11*p33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p
13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p
61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p
48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p
32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p
29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29)/(p63 + p64)/(p45 + p76)/(p32 + p33)/
(p27 + p28)/p74/p73/p96/p29/p11/p13/p93/p67/p99/p46/p48/p100/p49
/p51/p102/p58/p57/p103/p60/p104*q3

```

x35 | --> (p41 + p75)/p40/p104/p98*q2

x36 | --> q2

x37 | --> p77*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)*(p47 + p48)/
p99/p46/p100/p49/p51/p102/p58/p57/p103/p60/p67/p93/p104^2/p48*q3

x38 | --> p44*p98*(p47 + p48)*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*
p61*p77/p48/p104/p93/p67/p60/p103/p57/p58/p102/p51/p49/p100/p46/
p99/(p45 + p76)*q3

x39 | --> p99

x40 | --> (p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61*p77/p100/p49/p51/
/p102/p58/p57/p103/p60/p67/p93/p104/p48*q3

```

x41  |--> (p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61/p104/p93/p67/p60
        /p103/p57/p58/p102/p51/p49/p100*q3
x42  |--> p100
x43  |--> p61*p78*p86*(p68 + p83)*(p57 + p59)/p67/p93/p60/p103/p57/p58/p10
        2/p51*q3
x44  |--> p61*p78*(p68 + p83)*(p57 + p59)*(p56 + p86)/p67/p93/p60/p103/p57
        /p58/p102/p55*q3
x45  |--> p101
x46  |--> p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p93/(p5
        3 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*q3
x47  |--> (p79*p80 + p66*p70 + p66*p80 + p79*p70 + p69*p93*p80)*p54*p52*p1
        01*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p67/p60/p103/
        p57/p58/p102/p51/p49/p100/(p79*p80 + p79*p70 + p69*p93*p80)/(p53
        + p54)/p93/p65*q3
x48  |--> p78*(p57 + p59)*(p68 + p83)*p61/p103/p60/p67/p93/p57/p58/p102*q3
x49  |--> p102
x50  |--> p78*(p68 + p83)*p61/p103/p60/p67/p93/p57*q3
x51  |--> (p68 + p83)*p61/p103/p60/p67/p93*q3
x52  |--> p103
x53  |--> (p68 + p83)/p67/p93*q3
x54  |--> p62*p91*(p68 + p83)/p67/p93/(p63 + p64)*q3
x55  |--> (p70 + p80)*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p5
        0 + p51)/p93/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/
        p49/p51/p102/p58/p57/p103/p60/p67*q3
x56  |--> q3
x57  |--> p69*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)
        /(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p49/p51/p102
        /p58/p57/p103/p60/p67*q3
x58  |--> p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/p81/
        (p21 + p22)*q1
x59  |--> (p41*p39 + p104*p40*p98*p75 + p75*p39)/c1/k38/p98/p40/p104*q2 +
        2*p77*p86*p78*p61*(p57 + p59)*(p50 + p51)*(p68 + p83)*(p46*p99*p
        76*p48 + p46*p99*p45*p48 + p98*p44*p76*p48 + p98*p44*p76*p47)/p1
        04/(p45 + p76)/p67/p60/p103/p57/p58/p102/p51/p49/p100/p93/p48/p4
        6/p99/k38/c1*q3
x60  |--> p77*p86*p78*p61*(p50 + p51)*(p68 + p83)*(p57 + p59)*(p46*p104*p9
        9*p45*p48 + p43*p45*p48 + p44*p98*p104*p76*p48 + p46*p104*p99*p7
        6*p48 + p44*p98*p104*p76*p47 + p43*p76*p48 + p43*p45*p47 + p43*p
        76*p47)/c1/k42/p46/p48/p49/p51/p57/p58/p60/p67/p93/p99/p100/p102
        /p103/p104^2/(p45 + p76)*q3
c1   |--> p104

```

The steady state reaction velocity vector \mathbf{vbar} is given by $\mathbf{psi_py}[\mathbf{v}]$, where

$$\mathbf{vbar}[1] = p1*((-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22$$


```

* p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*
p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22
*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p
13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*
p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p1
5*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*
p21)*(p7 + p8)*p71*p88*p4*(p2 + p3)/p87/p1/(p5 + p71)/p3/p6/p11/
p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 - (p
68 + p83)*(p12 + p13)*p64*p62*p90*p9*p72*(p7 + p8)*p71*p88*p4*(p
2 + p3)/p89/p87/p1/(p5 + p71)/p3/p6/p11/p13/p67/p93/(p63 + p64)/
p8/(p10 + p72)*q3)*p87

vbar[ 2] = p2*(p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p
72*p22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p9
0*p12*p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*
p92*p10*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p9
0*p13*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p
82*p93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12
*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p9
3 + p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16
*p17*p89*p91*p92*p72*p21)/(p5 + p71)/p3/p6/p11/p13/p14/p16/p17/p
89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 - p4*p88*p71*(p7 + p8
)*p72*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p89/(p5 + p71)/p3/p
6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q3)

vbar[ 3] = p3*(p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p
72*p22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p9
0*p12*p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*
p92*p10*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p9
0*p13*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p
82*p93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12
*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p9
3 + p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16
*p17*p89*p91*p92*p72*p21)/(p5 + p71)/p3/p6/p11/p13/p14/p16/p17/p
89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 - p4*p88*p71*(p7 + p8
)*p72*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p89/(p5 + p71)/p3/p
6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q3)

vbar[ 4] = p4*((p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p1
9*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p
18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21
+ p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p
19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p7
2*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p2
0*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*
p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p9
1*p92*p72*p21)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/
p8/(p10 + p72)*q1 - (p7 + p8)*p72*p9*p90*p62*p64*(p68 + p83)*(p1
2 + p13)/p89/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q3)*p
88

vbar[ 5] = p5*((-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*
p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22
*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*
p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22
*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p
13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*
p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p1
5*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*
p21)*(p7 + p8)*p4*p88/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p9
1/p92/(p21 + p22)/p8/(p10 + p72)*q1 - (p68 + p83)*(p12 + p13)*p6
4*p62*p90*p9*p72*(p7 + p8)*p4*p88/p89/(p5 + p71)/p6/p11/p13/p67/
p93/(p63 + p64)/p8/(p10 + p72)*q3)

vbar[ 6] = p6*((p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p1
9*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p
18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21
+ p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p

```

```

19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p7
2*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p2
0*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*
p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p9
1*p92*p72*p21)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/
p8/(p10 + p72)*q1 - (p7 + p8)*p72*p9*p90*p62*p64*(p68 + p83)*(p1
2 + p13)/p89/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q3)*p
89

vbar[ 7] = p7*((-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*
p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22
*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*
p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22
*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p
13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*
p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p1
5*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*
p21)/p11/p13/p14/p16/p17/p89/p91/p92/(p21 + p22)/p8/(p10 + p72)*
q1 - p72*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p11/p13/p67/p93/
(p63 + p64)/p8/(p10 + p72)*q3)

vbar[ 8] = p8*((-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*
p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22
*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*
p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22
*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p
13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*
p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p1
5*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*
p21)/p11/p13/p14/p16/p17/p89/p91/p92/(p21 + p22)/p8/(p10 + p72)*
q1 - p72*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p11/p13/p67/p93/
(p63 + p64)/p8/(p10 + p72)*q3)

vbar[ 9] = p9*((p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p21 + p
22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12 + p13)*(p68 + p83)
*p62*p64/(p63 + p64)/p93/p67/p13/p11*q3)*p90

vbar[ 10] = p10*((p18 + p19)*(p15 + p16)*p93*p82*p22*p20*(p12 + p13)*p9*p90/
(p10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p6
8 + p83)*p64*p62*(p12 + p13)*p9*p90/(p10 + p72)/(p63 + p64)/p93/
p67/p13/p11*q3)

vbar[ 11] = p11*((p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p21 +
p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12 + p13)*(p68 + p83)
*p62*p64/(p63 + p64)/p93/p67/p13/p11*q3)*p91

vbar[ 12] = p12*(p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p13/p14/p16/p17/p89
/p92/(p21 + p22)*q1 - (p68 + p83)*p62*p64*p91/p13/p67/p93/(p63 +
p64)*q3)

vbar[ 13] = p13*(p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p13/p14/p16/p17/p89
/p92/(p21 + p22)*q1 - (p68 + p83)*p62*p64*p91/p13/p67/p93/(p63 +
p64)*q3)

vbar[ 14] = (p15 + p16)*p82*(p18 + p19)/p17/p89/p16*q1

vbar[ 15] = p15*p82*(p18 + p19)/p17/p89/p16*q1

vbar[ 16] = p82*(p18 + p19)/p17/p89*q1

vbar[ 17] = (p18 + p19)*q1

vbar[ 18] = p18*q1

vbar[ 19] = p19*q1

vbar[ 20] = p20*(p15 + p16)*p82*(p18 + p19)/p17/p89/p16/p14/p92*q1*p93

```

```

vbar[ 21] = p21*p20*p93*p82*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21
+ p22)*q1

vbar[ 22] = p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21
+ p22)*q1

vbar[ 23] = p23*(p15 + p16)*p82*(p18 + p19)/p17/p89/p16/p14/p92*q1*p94

vbar[ 24] = p24*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24
+ p25)*q1

vbar[ 25] = p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24
+ p25)*q1

vbar[ 26] = p26*((p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p21 +
p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12 + p13)*(p68 + p83
)*p62*p64/(p63 + p64)/p93/p67/p13/p11*q3)*p95

vbar[ 27] = p27*((p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p26*p95
/(p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p
68 + p83)*(p12 + p13)*p64*p62*p26*p95/(p63 + p64)/(p27 + p28)/p9
3/p67/p13/p11*q3)

vbar[ 28] = p28*((p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p26*p95
/(p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p
68 + p83)*(p12 + p13)*p64*p62*p26*p95/(p63 + p64)/(p27 + p28)/p9
3/p67/p13/p11*q3)

vbar[ 29] = p29*((p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p95*p28
*p26*(p30 + p73)/p96/p29/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73
/p17/p16/p14/p13/p11*q1 - (p68 + p83)*(p12 + p13)*p64*p62*p95*p2
8*p26*(p30 + p73)/p96/p29/(p63 + p64)/(p27 + p28)/p93/p73/p67/p1
3/p11*q3)*p96

vbar[ 30] = p30*(p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82
*p93/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/p16/p14/p13/p11
*q1 - p26*p28*p95*p62*p64*(p68 + p83)*(p12 + p13)/(p63 + p64)/(p
27 + p28)/p93/p73/p67/p13/p11*q3)

vbar[ 31] = p31*((p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p95*p28
*p26*(p30 + p73)/p96/p29/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73
/p17/p16/p14/p13/p11*q1 - (p68 + p83)*(p12 + p13)*p64*p62*p95*p2
8*p26*(p30 + p73)/p96/p29/(p63 + p64)/(p27 + p28)/p93/p73/p67/p1
3/p11*q3)*p97

vbar[ 32] = p32*((p30 + p73)*(p18 + p19)*(p15 + p16)*(p12 + p13)*p93*p82*p22
*p20*p97*p95*p31*p28*p26/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96
/p92/p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 - (p68 + p83)*(p30 +
p73)*(p12 + p13)*p64*p62*p97*p95*p31*p28*p26/(p63 + p64)/(p32 +
p33)/(p27 + p28)/p96/p93/p73/p67/p29/p13/p11*q3)

vbar[ 33] = p33*((p30 + p73)*(p18 + p19)*(p15 + p16)*(p12 + p13)*p93*p82*p22
*p20*p97*p95*p31*p28*p26/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96
/p92/p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 - (p68 + p83)*(p30 +
p73)*(p12 + p13)*p64*p62*p97*p95*p31*p28*p26/(p63 + p64)/(p32 +
p33)/(p27 + p28)/p96/p93/p73/p67/p29/p13/p11*q3)

vbar[ 34] = p34*(p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p18 + p19)*(p15 +
p16)*(p30 + p73)*(p104*p98*p74*p36 + p35*p74 + p35*p37)*(p12 + p
13)/p11/p13/p14/p16/p17/p29/p34/p36/p73/p74/p89/p91/p92/p96/p98/
p104/(p32 + p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p34*p35/p36/p74*
p75/p98/p104*(p37 + p74)*q2 - (p68 + p83)*(4*p11*p33*p35*p46*p48
*p50*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p33*p35*p46*p48*p50*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p33*p35*p46*p48*p50*p59*p61*p63*p13*p73
*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p46*p48*p50
*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11
*p33*p35*p46*p48*p50*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96

```

76

77

78

79

*p32*p35*p37*p45*p46*p48*p51*p57*p61*p13*p64*p73*p77*p78*p86*p96
*p99*p28*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p51*p57*p61*p13*p64
*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p45*p46*p48
*p51*p57*p61*p63*p13*p73*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32
*p35*p37*p45*p46*p48*p51*p57*p61*p63*p13*p73*p77*p78*p86*p96*p99
*p27*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p50*p59*p61*p13*p64*p73
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p50
*p59*p61*p13*p64*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35
*p37*p45*p46*p48*p50*p59*p61*p63*p13*p73*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p50*p59*p61*p63*p13*p73*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p50*p57
*p61*p13*p64*p73*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37
*p45*p46*p48*p50*p57*p61*p13*p64*p73*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p32*p35*p37*p45*p46*p48*p50*p57*p61*p63*p13*p73*p77*p78
*p86*p96*p99*p28*p29 + 4*p11*p32*p35*p37*p45*p46*p48*p50*p57*p61
*p63*p13*p73*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p35*p37*p44
*p48*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p32*p35*p37*p44*p48*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86
*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p48*p51*p59*p61*p63*p13
*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p48
*p51*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p32*p35*p37*p44*p48*p51*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96
*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p48*p51*p57*p61*p13*p64*p73
*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p48*p51
*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32
*p35*p37*p44*p48*p51*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98
*p27*p29 + 4*p11*p32*p35*p37*p44*p48*p50*p59*p61*p13*p64*p73*p76
*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p48*p50*p59
*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35
*p37*p44*p48*p50*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28
*p29 + 4*p11*p32*p35*p37*p44*p48*p50*p59*p61*p63*p13*p73*p76*p77
*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p48*p50*p57*p61
*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37
*p44*p48*p50*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p32*p35*p37*p44*p48*p50*p57*p61*p63*p13*p73*p76*p77*p78
*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p48*p50*p57*p61*p63
*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44
*p47*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p32*p35*p37*p44*p47*p51*p59*p61*p13*p64*p73*p76*p77*p78*p86
*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p47*p51*p59*p61*p63*p13
*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p47
*p51*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p32*p35*p37*p44*p47*p51*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96
*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p47*p51*p57*p61*p63*p13*p73
*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p47*p51
*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32
*p35*p37*p44*p47*p51*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98
*p27*p29 + 4*p11*p32*p35*p37*p44*p47*p50*p59*p61*p13*p64*p73*p76
*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p47*p50*p59
*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35
*p37*p44*p47*p50*p59*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28
*p29 + 4*p11*p32*p35*p37*p44*p47*p50*p59*p61*p63*p13*p73*p76*p77
*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p44*p47*p50*p57*p61
*p13*p64*p73*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37
*p44*p47*p50*p57*p61*p13*p64*p73*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p32*p35*p37*p44*p47*p50*p57*p61*p63*p13*p73*p76*p77*p78
*p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p47*p50*p57*p61*p63
*p13*p73*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p35*p46*p48*p49*p
51*p57*p58*p60*p62*p13*p64*p74*p76*p95*p26*p97*p99*p100*p102*p10
3*p104*p28*p30*p31 + p33*p35*p46*p48*p49*p51*p57*p58*p60*p62*p13
*p64*p73*p74*p76*p95*p26*p97*p99*p100*p102*p103*p104*p28*p31 + p
33*p35*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p74*p76*p95*p26*p
97*p99*p100*p102*p103*p104*p28*p30*p31 + p33*p35*p46*p48*p12*p49
*p51*p57*p58*p60*p62*p64*p73*p74*p76*p95*p26*p97*p99*p100*p102*p
103*p104*p28*p31 + p33*p35*p45*p46*p48*p49*p51*p57*p58*p60*p62*p
13*p64*p74*p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p33
*p35*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p74*p95*p26
*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p35*p45*p46*p48*p12*p

$$\begin{aligned}
& 49*p51*p57*p58*p60*p62*p64*p74*p95*p26*p97*p99*p100*p102*p103*p1 \\
& 04*p28*p30*p31 + p33*p35*p45*p46*p48*p12*p49*p51*p57*p58*p60*p62 \\
& *p64*p73*p74*p95*p26*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p \\
& 35*p37*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p76*p95*p26*p97*p \\
& 99*p100*p102*p103*p104*p28*p30*p31 + p33*p35*p37*p46*p48*p49*p51 \\
& *p57*p58*p60*p62*p13*p64*p73*p76*p95*p26*p97*p99*p100*p102*p103* \\
& p104*p28*p31 + p33*p35*p37*p46*p48*p12*p49*p51*p57*p58*p60*p62*p \\
& 64*p76*p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p33*p35 \\
& *p37*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p73*p76*p95*p26*p97 \\
& *p99*p100*p102*p103*p104*p28*p31 + p33*p35*p37*p45*p46*p48*p49*p \\
& 51*p57*p58*p60*p62*p13*p64*p95*p26*p97*p99*p100*p102*p103*p104*p \\
& 28*p30*p31 + p33*p35*p37*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13 \\
& *p64*p73*p95*p26*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p35*p \\
& 37*p45*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p95*p26*p97*p99*p \\
& 100*p102*p103*p104*p28*p30*p31 + p33*p35*p37*p45*p46*p48*p12*p49 \\
& *p51*p57*p58*p60*p62*p64*p73*p95*p26*p97*p99*p100*p102*p103*p104 \\
& *p28*p31 + p33*p36*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p74*p \\
& 76*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p30*p31 + p33*p \\
& 36*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p74*p76*p95*p26*p \\
& 97*p98*p99*p100*p102*p103*p104^2*p28*p31 + p33*p36*p46*p48*p12*p \\
& 49*p51*p57*p58*p60*p62*p64*p74*p76*p95*p26*p97*p98*p99*p100*p102 \\
& *p103*p104^2*p28*p30*p31 + p33*p36*p46*p48*p12*p49*p51*p57*p58*p \\
& 60*p62*p64*p73*p74*p76*p95*p26*p97*p98*p99*p100*p102*p103*p104^2 \\
& *p28*p31 + p33*p36*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p \\
& 74*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p30*p31 + p33*p \\
& 36*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p74*p95*p26*p \\
& 97*p98*p99*p100*p102*p103*p104^2*p28*p31 + p33*p36*p45*p46*p48*p \\
& 12*p49*p51*p57*p58*p60*p62*p64*p74*p95*p26*p97*p98*p99*p100*p102 \\
& *p103*p104^2*p28*p30*p31 + p33*p36*p45*p46*p48*p12*p49*p51*p57*p \\
& 58*p60*p62*p64*p73*p74*p95*p26*p97*p98*p99*p100*p102*p103*p104^2 \\
& *p28*p31)/p104^2/p60/p103/p57/p58/p102/p51/p49/p100/p48/p46/p99/ \\
& p67/p93/p13/p11/p29/p96/p73/p74/(p63 + p64)/(p32 + p33)/(p27 + p \\
& 28)/(p45 + p76)/p36/p98/p34*q3)
\end{aligned}$$

$$\begin{aligned}
\text{vbar}[35] = & p35*(p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p30 + p73)*(p18 + \\
& p19)*(p15 + p16)*(p12 + p13)*(p37 + p74)/p11/p13/p14/p16/p17/p29 \\
& /p36/p73/p74/p89/p91/p92/p96/p98/p104/(p32 + p33)/(p27 + p28)/(p \\
& 21 + p22)*q1 - 2/p36/p74*p75/p98/p104*(p37 + p74)*q2 - (p68 + p8 \\
& 3)*(p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97* \\
& p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p5 \\
& 7*p58*p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p3 \\
& 0*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p95* \\
& p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p5 \\
& 1*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p104*p2 \\
& 8*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73* \\
& p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p11*p33*p44*p47* \\
& p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11* \\
& p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27* \\
& p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86* \\
& p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76* \\
& p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64* \\
& p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51* \\
& p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33* \\
& p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 \\
& + 4*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96* \\
& p98*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77* \\
& p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73* \\
& p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p59* \\
& p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44* \\
& p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4* \\
& p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98* \\
& p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78* \\
& p86*p96*p98*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13* \\
& p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59* \\
& p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46* \\
& p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11* \\
& p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28* \\
& p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*
\end{aligned}$$

p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*
p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*
p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*
p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*
p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*
p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*
p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*
p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57*
p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*
p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*
p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*
p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*
p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*
p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*
p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*
p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*
p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*
p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*
p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p64*
p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*
p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*
p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*
p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*
p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*
p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*
p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*
p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*
p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*
p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*
p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*
p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*
p32*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*
p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*
p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*
p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*
p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*
p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*
p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*
p99*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*
p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*
p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p59*
p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*
p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*
p28*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*
p86*p96*p99*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*
p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*
p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*
p32*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*
p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*
p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*
p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*
p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*
p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*
p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*
p99*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*
p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p63*p73*
p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p59*
p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p44*p48*
p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*
p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*
p29 + 4

p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*
p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*
p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p64*p73*p13*
p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p57*p61*
p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*
p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*
p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*
p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*
p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*
p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p63*
p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*
p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*
p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*
p98*p27*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*
p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*
p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p57*
p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*
p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*
p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*
p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*
p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p63*p73*
p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*
p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p47*
p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*
p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*
p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*
p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*
p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p64*
p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*
p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p4
8*p49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*
p103*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*
p73*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p4
6*p48*p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p
102*p103*p104*p28*p30*p31 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p7
3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p5
7*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p4
4*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
4*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p9
8*p27*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p1
3*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p6
1*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p4
7*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p1
1*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p2
8*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p6
3*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p5
0*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
2*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p2
9 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p9
6*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p7
7*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p7
3*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p5
7*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p4
6*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p7
8*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p7
3*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p5
7*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p4
6*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p1
1*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
8*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29)*(p37 + p74)/p98/p36/(p63 + p64)/(p45 + p76)/(
p32 + p33)/(p27 + p28)/p74/p73/p96/p29/p11/p13/p93/p67/p99/p46/p

48/p100/p49/p51/p102/p58/p57/p103/p60/p104^2*q3)

```
vbar[ 36] = p36*p104*(p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p30 + p73)*(p
18 + p19)*(p15 + p16)*(p12 + p13)*(p37 + p74)/p11/p13/p14/p16/p1
7/p29/p36/p73/p74/p89/p91/p92/p96/p98/p104/(p32 + p33)/(p27 + p2
8)/(p21 + p22)*q1 - 2/p36/p74*p75/p98/p104*(p37 + p74)*q2 - (p68
+ p83)*(p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95
*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p
51*p57*p58*p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104*p
28*p30*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13
*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p
49*p51*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p1
04*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64
*p73*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p11*p33*p44
*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98
*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78
*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48
*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28
*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64
*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51
*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32
*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77
*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51
*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45
*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99
*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78
*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73
*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57
*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46
*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11
*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27
*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p13*p77
*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50
*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33
*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96
*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64
*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50
*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45
*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4
*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99
*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78
*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48
*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11
*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64
*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50
*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33
*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77
*p78*p86*p96
```

*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44
*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p32*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p27*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48
*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11
*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86
*p96*p99*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51
*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32
*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96
*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44
*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p32*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78
*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73
*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57
*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46
*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11
*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86
*p96*p99*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50
*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33
*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96
*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p57
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44
*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98
*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78
*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47
*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28
*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64
*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50
*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32
*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96
*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p63
*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50
*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44
*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p27*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p59*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47
*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p
46*p48*p49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*

$$\begin{aligned}
 & p102*p103*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62 \\
 & *p64*p73*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p \\
 & 33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p \\
 & 100*p102*p103*p104*p28*p30*p31 + 4*p11*p32*p44*p48*p50*p57*p61*p \\
 & 63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p \\
 & 50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p \\
 & 32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p \\
 & 29 + 4*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p \\
 & 96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p \\
 & 77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p \\
 & 73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p \\
 & 57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p \\
 & 44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + \\
 & 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p \\
 & 99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p \\
 & 78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p \\
 & 13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p \\
 & 61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p \\
 & 48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p \\
 & 11*p32*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p \\
 & 27*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p \\
 & 86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p \\
 & 76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p \\
 & 64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p \\
 & 50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p \\
 & 33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p \\
 & 29 + 4*p11*p33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p \\
 & 96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p \\
 & 77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p \\
 & 64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p \\
 & 50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p \\
 & 45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + \\
 & 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p \\
 & 98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p \\
 & 78*p86*p96*p98*p27*p29)*(p37 + p74)/p98/p36/(p63 + p64)/(p45 + p \\
 & 76)/(p32 + p33)/(p27 + p28)/p74/p73/p96/p29/p11/p13/p93/p67/p99/ \\
 & p46/p48/p100/p49/p51/p102/p58/p57/p103/p60/p104^2*q3)*p98
 \end{aligned}$$

$$\begin{aligned}
 \text{vbar}[37] = & p37*((p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93 \\
 & *p82*p33*p31*p28*p26*p22*p20/p11/p13/p14/p16/p17/p29/p73/p74/p89 \\
 & /p91/p92/p96/(p32 + p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p74*p75* \\
 & q2 - (p68 + p83)*(p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p7 \\
 & 3*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46* \\
 & p48*p49*p51*p57*p58*p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p1 \\
 & 03*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p6 \\
 & 4*p73*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45* \\
 & p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p10 \\
 & 2*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p6 \\
 & 0*p62*p64*p73*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p1 \\
 & 1*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p2 \\
 & 8*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p8 \\
 & 6*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p7 \\
 & 6*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p6 \\
 & 4*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p5 \\
 & 1*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p3 \\
 & 3*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p2 \\
 & 9 + 4*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p9 \\
 & 6*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p7 \\
 & 7*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p7 \\
 & 3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p5 \\
 & 7*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p4 \\
 & 4*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + \\
 & 4*p11*p32*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9 \\
 & 8*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p7 \\
 & 8*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p1 \\
 & 3*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p6 \\
 & 1*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p4 \\
 & 6*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p1
 \end{aligned}$$

1*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p2
7*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p8
6*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p1
3*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p6
1*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p4
8*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p3
3*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p9
6*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p7
7*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p7
3*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p5
7*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p4
6*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p7
8*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p7
3*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p5
7*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p4
6*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p1
1*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p2
8*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p8
6*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p1
3*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p6
3*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p5
1*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
3*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p2
9 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p9
6*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p7
7*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p7
3*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p5
9*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p4
6*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p1
3*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p6
1*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p4
8*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p1
1*p32*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
8*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p6
3*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p5
0*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
2*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p2
9 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p9
6*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p7
7*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p7
3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p5
7*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p4
6*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p32*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p7
8*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p1
3*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p6
1*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p4
7*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p1
1*p32*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
8*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p1
3*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p6
1*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p4
8*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
2*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p2
9 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p9
6*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p7
7*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p63*p7
3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p5

88


```

p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*
p76*p77*p78*p86*p96*p98*p27*p29)/(p63 + p64)/(p45 + p76)/(p32 +
p33)/(p27 + p28)/p74/p73/p96/p29/p11/p13/p93/p67/p99/p46/p48/p10
0/p49/p51/p102/p58/p57/p103/p60/p104*q3)

vbar[ 38] = k38*c1*((p41*p39 + p104*p40*p98*p75 + p75*p39)/c1/k38/p98/p40/p1
04*q2 + 2*p77*p86*p78*p61*(p57 + p59)*(p50 + p51)*(p68 + p83)*(p
46*p99*p76*p48 + p46*p99*p45*p48 + p98*p44*p76*p48 + p98*p44*p76
*p47)/p104/(p45 + p76)/p67/p60/p103/p57/p58/p102/p51/p49/p100/p9
3/p48/p46/p99/k38/c1*q3)

vbar[ 39] = p39*(p41 + p75)/p40/p104/p98*q2

vbar[ 40] = (p41 + p75)*q2

vbar[ 41] = p41*q2

vbar[ 42] = p77*p86*p78*p61*(p50 + p51)*(p68 + p83)*(p57 + p59)*(p46*p104*p9
9*p45*p48 + p43*p45*p48 + p44*p98*p104*p76*p48 + p46*p104*p99*p7
6*p48 + p44*p98*p104*p76*p47 + p43*p76*p48 + p43*p45*p47 + p43*p
76*p47)/p46/p48/p49/p51/p57/p58/p60/p67/p93/p99/p100/p102/p103/p
104^2/(p45 + p76)*q3

vbar[ 43] = p43*p77*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)*(p47 + p
48)/p99/p46/p100/p49/p51/p102/p58/p57/p103/p60/p67/p93/p104^2/p4
8*q3

vbar[ 44] = p44/p104*p98*p77*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)
*(p47 + p48)/p99/p46/p100/p49/p51/p102/p58/p57/p103/p60/p67/p93/
p48*q3

vbar[ 45] = p45*p44*p98*(p47 + p48)*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*
p78*p61*p77/p48/p104/p93/p67/p60/p103/p57/p58/p102/p51/p49/p100/
p46/p99/(p45 + p76)*q3

vbar[ 46] = 1/p104*p77*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)*(p47
+ p48)/p100/p49/p51/p102/p58/p57/p103/p60/p67/p93/p48*q3

vbar[ 47] = p47*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61*p77/p100/p49
/p51/p102/p58/p57/p103/p60/p67/p93/p104/p48*q3

vbar[ 48] = p77*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61/p104/p93/p67
/p60/p103/p57/p58/p102/p51/p49/p100*q3

vbar[ 49] = (p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61/p93/p67/p60/p103
/p57/p58/p102/p51*q3

vbar[ 50] = p50*p61*p78*p86*(p68 + p83)*(p57 + p59)/p67/p93/p60/p103/p57/p58
/p102/p51*q3

vbar[ 51] = p61*p78*p86*(p68 + p83)*(p57 + p59)/p103/p60/p67/p93/p57/p58/p10
2*q3

vbar[ 52] = p52*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61/p93/p67/p60/
p103/p57/p58/p102/p51/p49/p100*q3*p101

vbar[ 53] = p53*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p93
/(p53 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*q3

vbar[ 54] = p52*p86*p78*p61*p54*(p68 + p83)*(p57 + p59)*(p50 + p51)*p101/p93
/(p53 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*q3

vbar[ 55] = p61*p78*(p68 + p83)*(p57 + p59)*(p56 + p86)/p67/p93/p60/p103/p57
/p58/p102*q3

vbar[ 56] = p56*p78*(p57 + p59)*(p68 + p83)*p61/p103/p60/p67/p93/p57/p58/p10
2*q3

```

```

vbar[ 57] = p78*(p68 + p83)*p61/p103/p60/p67/p93*q3
vbar[ 58] = p78*(p57 + p59)*(p68 + p83)*p61/p103/p60/p67/p93/p57*q3
vbar[ 59] = p59*p78*(p68 + p83)*p61/p103/p60/p67/p93/p57*q3
vbar[ 60] = p61*(p68 + p83)/p67/p93*q3
vbar[ 61] = p61*(p68 + p83)/p67/p93*q3
vbar[ 62] = p62*p91*(p68 + p83)/p67/p93*q3
vbar[ 63] = p63*p62*p91*(p68 + p83)/p67/p93/(p63 + p64)*q3
vbar[ 64] = p64*p62*p91*(p68 + p83)/p67/p93/(p63 + p64)*q3
vbar[ 65] = (p79*p80 + p66*p70 + p66*p80 + p79*p70 + p69*p93*p80)*p54*p52*p1
01*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p67/p60/p103/
p57/p58/p102/p51/p49/p100/(p79*p80 + p79*p70 + p69*p93*p80)/(p53
+ p54)/p93*q3
vbar[ 66] = p66*(p70 + p80)*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)
*(p50 + p51)/p93/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p
100/p49/p51/p102/p58/p57/p103/p60/p67*q3
vbar[ 67] = (p68 + p83)*q3
vbar[ 68] = p68*q3
vbar[ 69] = p69*(p70 + p80)*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)
*(p50 + p51)/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/
p49/p51/p102/p58/p57/p103/p60/p67*q3
vbar[ 70] = p70*p69*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 +
p51)/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p49/p51/
p102/p58/p57/p103/p60/p67*q3
vbar[ 71] = p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p
22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p1
2*p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*
p10*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p1
3*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p
93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15
*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 +
p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17
*p89*p91*p92*p72*p21)/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p9
1/p92/(p21 + p22)/p8/(p10 + p72)*q1 - (p68 + p83)*(p12 + p13)*(p
7 + p8)*p4*p88*p71*p72*p9*p90*p62*p64/p89/(p5 + p71)/p6/p11/p13/
p67/p93/(p63 + p64)/p8/(p10 + p72)*q3 + p87*q4
vbar[ 72] = p87*q4
vbar[ 73] = p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p
22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p1
2*p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*
p10*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p1
3*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p
93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15
*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 +
p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17
*p89*p91*p92*p72*p21)/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p9
1/p92/(p21 + p22)/p8/(p10 + p72)*q1 - (p68 + p83)*(p12 + p13)*(p
7 + p8)*p4*p88*p71*p72*p9*p90*p62*p64/p89/(p5 + p71)/p6/p11/p13/
p67/p93/(p63 + p64)/p8/(p10 + p72)*q3 + p88*q5
vbar[ 74] = p88*q5
vbar[ 75] = p71*((-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13

```

```

* p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p2
2*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9
*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p2
2*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*
p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82
*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p
15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72
*p21)*(p7 + p8)*p4*p88/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p
91/p92/(p21 + p22)/p8/(p10 + p72)*q1 - (p68 + p83)*(p12 + p13)*p
64*p62*p90*p9*p72*(p7 + p8)*p4*p88/p89/(p5 + p71)/p6/p11/p13/p67
/p93/(p63 + p64)/p8/(p10 + p72)*q3)

vbar[ 76] = (p15 + p16)*(p18 + p19)*(p12 + p13)*p72*p9*p90*p20*p22*p82*p93/(
p10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12
+ p13)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p67/p
93/(p63 + p64)*q3 + p89*q6

vbar[ 77] = p89*q6

vbar[ 78] = (p15 + p16)*(p18 + p19)*(p12 + p13)*p72*p9*p90*p20*p22*p82*p93/(
p10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12
+ p13)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p67/p
93/(p63 + p64)*q3 + p90*q7

vbar[ 79] = p90*q7

vbar[ 80] = p72*((p18 + p19)*(p15 + p16)*p93*p82*p22*p20*(p12 + p13)*p9*p90/
(p10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p6
8 + p83)*p64*p62*(p12 + p13)*p9*p90/(p10 + p72)/(p63 + p64)/p93/
p67/p13/p11*q3)

vbar[ 81] = p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/
(p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p1
2 + p13)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p28)
/p93/p67/p13/p11*q3 + p95*q8

vbar[ 82] = p95*q8

vbar[ 83] = p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/
(p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p1
2 + p13)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p28)
/p93/p67/p13/p11*q3 + p96*q9

vbar[ 84] = p96*q9

vbar[ 85] = p73*(p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82
*p93/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/p16/p14/p13/p11
*q1 - p26*p28*p95*p62*p64*(p68 + p83)*(p12 + p13)/(p63 + p64)/(p
27 + p28)/p93/p73/p67/p13/p11*q3)

vbar[ 86] = (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*
p33*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/
p92/p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 - p97*(p68 + p83)*(p3
0 + p73)*(p12 + p13)*p26*p28*p31*p33*p62*p64*p95/p11/p13/p67/p73
/p93/(p63 + p64)/(p32 + p33)/(p27 + p28)/p29/p96*q3 + p97*q10

vbar[ 87] = p97*q10

vbar[ 88] = (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*
p33*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/
p92/p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 - p75*q2 - (p68 + p83
)*(p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97*p
99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p57
*p58*p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30
*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p95*p
97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51
*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p104*p28
*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p

```

95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 3*p11*p33*p44*p47*p
50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p
33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 3*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p51*p59*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p51*p
59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p
44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
3*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
98*p27*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p51*p59*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p
48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p
11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p
28*p29 + 3*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p
61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p
48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p
77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p
63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p
50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p
45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p
99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p
48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p
11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p
86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p
13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p
61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p
48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p
33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p
29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p77*p
77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p
57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p
46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p
48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 3*p
11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p
28*p29 + 3*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p51*p57*p61*p
63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p
50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p
32*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 3*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 3*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p
45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p
99*p27*p29 + 3*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p

78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p57*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p
48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p
11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p99*p27*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p
63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p
50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p
32*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p
96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p
77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p
64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p
51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p
45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p
99*p27*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p50*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p
48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p
11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p
28*p29 + 3*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p50*p57*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p
50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p
33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 3*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 3*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p47*p51*p59*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p51*p
59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p
44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
3*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
98*p27*p29 + 3*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p50*p57*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p50*p57*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p
47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p
11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p
86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p63*p73*p
13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p
61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11*p33*p44*p47*p
51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p
33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 3*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 3*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p47*p50*p59*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p
59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48
*p49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p
103*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p
73*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p46
*p48*p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p1
02*p103*p104*p28*p30*p31 + 3*p11*p32*p44*p48*p50*p57*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p50*p57
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44
*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3
*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p27*p29 + 3*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p51*p57*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47
*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11

```

*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50
*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32
*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96
*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46
*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4
*p11*p33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99
*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78
*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73
*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57
*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46
*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11
*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28
*p29 + 3*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p98*p27*p29)/p48/p104/p93/p67/p60/p103/p57/p58/p102/p51/p49
/p100/p46/p99/p13/p11/p29/p96/p73/(p63 + p64)/(p32 + p33)/(p27 +
p28)/(p45 + p76)*q3 + p98*q11

vbar[ 89] = p98*q11

vbar[ 90] = p74*((p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93
*p82*p33*p31*p28*p26*p22*p20/p11/p13/p14/p16/p17/p29/p73/p74/p89
/p91/p92/p96/(p32 + p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p74*p75*
q2 - (p68 + p83)*(p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p7
3*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*
p48*p49*p51*p57*p58*p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p1
03*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p6
4*p73*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*
p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p10
2*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p6
0*p62*p64*p73*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p1
1*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p2
8*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p7
6*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p6
4*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p5
1*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p3
3*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p2
9 + 4*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p9
6*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p7
7*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p7
3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p5
7*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p4
4*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
4*p11*p32*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9
8*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p1
3*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p6
1*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p4
6*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p1
1*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p2
7*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p8
6*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p1
3*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p6
1*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p4
6*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p3
3*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p9
6*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p7
7*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p7
3*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p5

```

7*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p4
6*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p7
8*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p7
3*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p5
7*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p4
6*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p1
1*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p2
8*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p8
6*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p1
3*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p6
3*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p5
1*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
3*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p2
9 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p9
6*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p7
7*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p7
3*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p5
9*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p4
6*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p1
3*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p6
1*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p4
8*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p1
1*p32*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
8*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p6
3*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p5
0*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
2*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p2
9 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p9
6*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p7
7*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p7
3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p5
7*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p4
6*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p32*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p7
8*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p1
3*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p6
1*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p4
7*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p1
1*p32*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
8*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p1
3*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p6
1*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p4
8*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
2*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p2
9 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p9
6*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p7
7*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p63*p7
3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p5
7*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p4
4*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
4*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p9
8*p27*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p1
3*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57*p6
1*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p4
8*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p1
1*p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p2
8*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p7
6*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64

```

6*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p6
4*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p5
1*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p3
3*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p2
9 + 4*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p9
6*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p7
7*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p7
3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p5
7*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p4
4*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
4*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9
8*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p7
8*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p7
3*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p5
9*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p4
6*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p1
1*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
8*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p6
3*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p5
0*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p3
3*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p2
9 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*
p26*p100*p102*p103*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p5
8*p60*p62*p64*p73*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p2
8*p31 + p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*
p99*p26*p100*p102*p103*p104*p28*p30*p31 + 4*p11*p32*p44*p48*p50*
p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*
p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*
p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*
p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*
p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*
p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*
p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*
p11*p32*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*
p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*
p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*
p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*
p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
p32*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*
p29 + 4*p11*p32*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*
p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*
p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*
p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*
p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*
p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*
p99*p28*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*
p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*
p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*
p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*
p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*
p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*
p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*
p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*
p76*p77*p78*p86*p96*p98*p27*p29)/(p63 + p64)/(p45 + p76)/(p32 +
p33)/(p27 + p28)/p74/p73/p96/p29/p11/p13/p93/p67/p99/p46/p48/p10
0/p49/p51/p102/p58/p57/p103/p60/p104*q3)

```

vbar[91] = p75*q2

vbar[92] = p76*p44*p98*(p47 + p48)*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*
p78*p61*p77/p48/p104/p93/p67/p60/p103/p57/p58/p102/p51/p49/p100/
p46/p99/(p45 + p76)*q3


```

vbar[ 93] = p77*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61/p104/p93/p67
           /p60/p103/p57/p58/p102/p51/p49/p100*q3

vbar[ 94] = p78*(p68 + p83)*p61/p103/p60/p67/p93*q3

vbar[ 95] = (p69*p54*p52*p101*p61*p78*p86*p80*p50*p83*p59 + p69*p54*p52*p101
           *p61*p78*p86*p80*p50*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80*
           p50*p57*p83 + p69*p54*p52*p101*p61*p78*p86*p80*p50*p68*p59 + p69
           *p54*p52*p101*p61*p78*p86*p80*p51*p83*p59 + p69*p54*p52*p101*p61
           *p78*p86*p80*p51*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80*p51*
           p57*p83 + p69*p54*p52*p101*p61*p78*p86*p80*p51*p68*p59 + p83*p67
           *p60*p103*p57*p58*p102*p51*p49*p100*p54*p79*p80 + p83*p67*p60*p1
           03*p57*p58*p102*p51*p49*p100*p53*p79*p80 + p83*p67*p60*p103*p57*
           p58*p102*p51*p49*p100*p53*p79*p70 + p83*p67*p60*p103*p57*p58*p10
           2*p51*p49*p100*p53*p69*p93*p80 + p83*p67*p60*p103*p57*p58*p102*p
           51*p49*p100*p54*p79*p70 + p83*p67*p60*p103*p57*p58*p102*p51*p49*
           p100*p54*p69*p93*p80)/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p
           80)/p100/p49/p51/p102/p58/p57/p103/p60/p67*q3 + p93*q12

vbar[ 96] = p93*q12

vbar[ 97] = p52*p86*p78*p61*p54*(p68 + p83)*(p57 + p59)*(p50 + p51)*p101/p93
           /(p53 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*q3 + p101*q1
           3

vbar[ 98] = p101*q13

vbar[ 99] = p79*(p70 + p80)*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)
           *(p50 + p51)/p93/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p
           100/p49/p51/p102/p58/p57/p103/p60/p67*q3

vbar[100] = p80*p69*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 +
           p51)/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p49/p51/
           p102/p58/p57/p103/p60/p67*q3

vbar[101] = p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21
           + p22)*q1 + p91*q14

vbar[102] = p91*q14

vbar[103] = p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21
           + p22)*q1

vbar[104] = p82*(p18 + p19)/p17/p89*q1 + p92*q15

vbar[105] = p92*q15

vbar[106] = p82*(p18 + p19)/p17/p89*q1

vbar[107] = p83*q3

vbar[108] = p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24
           + p25)*q1 + p94*q16

vbar[109] = p94*q16

vbar[110] = p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24
           + p25)*q1

vbar[111] = (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*
           p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82
           *p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*
           p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82
           *p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p
           16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93
           + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
           9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)
           *(p7 + p8)*p71*p88*p4*(p85*p2 + p85*p3 + p1*p87*p3)/p87/p1/(p5 +

```

```

    p71)/p3/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p1
    0 + p72)*q1 - (p12 + p13)*(p68 + p83)*p64*p62*p90*p9*p72*(p7 + p
    8)*p71*p88*p4*(p85*p2 + p85*p3 + p1*p87*p3)/p89/p87/p1/(p5 + p71
    )/p3/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q3

vbar[112] = p85*((-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13
    *p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p2
    2*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9
    *p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p2
    2*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*
    p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82
    *p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p
    15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72
    *p21)*(p7 + p8)*p71*p88*p4*(p2 + p3)/p87/p1/(p5 + p71)/p3/p6/p11
    /p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 - (
    p68 + p83)*(p12 + p13)*p64*p62*p90*p9*p72*(p7 + p8)*p71*p88*p4*(
    p2 + p3)/p89/p87/p1/(p5 + p71)/p3/p6/p11/p13/p67/p93/(p63 + p64)
    /p8/(p10 + p72)*q3)

vbar[113] = p61*p78*p86*(p68 + p83)*(p57 + p59)/p103/p60/p67/p93/p57/p58/p10
    2*q3 + p100*q17

vbar[114] = p100*q17

vbar[115] = p61*p78*p86*(p68 + p83)*(p57 + p59)/p103/p60/p67/p93/p57/p58/p10
    2*q3

```

After solving $\psi_p(\dot{x})=0$, we have the following composite forward map ψ_{py} ,

```

k1    |--> p1
k2    |--> p2
k3    |--> p3
k4    |--> p4
k5    |--> p5
k6    |--> p6
k7    |--> p7
k8    |--> p8
k9    |--> p9
k10   |--> p10
k11   |--> p11
k12   |--> p12
k13   |--> p13
k14   |--> p14
k15   |--> p15
k16   |--> p16
k17   |--> p17
k18   |--> p18
k19   |--> p19

```

| | | |
|-----|-----|-----|
| k20 | --> | p20 |
| k21 | --> | p21 |
| k22 | --> | p22 |
| k23 | --> | p23 |
| k24 | --> | p24 |
| k25 | --> | p25 |
| k26 | --> | p26 |
| k27 | --> | p27 |
| k28 | --> | p28 |
| k29 | --> | p29 |
| k30 | --> | p30 |
| k31 | --> | p31 |
| k32 | --> | p32 |
| k33 | --> | p33 |
| k34 | --> | p34 |
| k35 | --> | p35 |
| k36 | --> | p36 |
| k37 | --> | p37 |
| k38 | --> | p38 |
| k39 | --> | p39 |
| k40 | --> | p40 |
| k41 | --> | p41 |
| k42 | --> | p42 |
| k43 | --> | p43 |
| k44 | --> | p44 |
| k45 | --> | p45 |
| k46 | --> | p46 |
| k47 | --> | p47 |
| k48 | --> | p48 |
| k49 | --> | p49 |
| k50 | --> | p50 |
| k51 | --> | p51 |
| k52 | --> | p52 |
| k53 | --> | p53 |

k54 |--> p54
 k55 |--> p55
 k56 |--> p56
 k57 |--> p57
 k58 |--> p58
 k59 |--> p59
 k60 |--> p60
 k61 |--> p61
 k62 |--> p62
 k63 |--> p63
 k64 |--> p64
 k65 |--> p65
 k66 |--> p66
 k67 |--> p67
 k68 |--> p68
 k69 |--> p69
 k70 |--> p70
 k71 |--> $p4 \cdot p88 \cdot p71 \cdot (p7 + p8) \cdot (-p19 \cdot p11 \cdot p13 \cdot p14 \cdot p16 \cdot p17 \cdot p89 \cdot p91 \cdot p92 \cdot p72 \cdot p22 - p19 \cdot p11 \cdot p13 \cdot p14 \cdot p16 \cdot p17 \cdot p89 \cdot p91 \cdot p92 \cdot p10 \cdot p22 + p72 \cdot p9 \cdot p90 \cdot p12 \cdot p16 \cdot p18 \cdot p20 \cdot p22 \cdot p82 \cdot p93 - p19 \cdot p11 \cdot p13 \cdot p14 \cdot p16 \cdot p17 \cdot p89 \cdot p91 \cdot p92 \cdot p10 \cdot p21 + p72 \cdot p9 \cdot p90 \cdot p13 \cdot p15 \cdot p19 \cdot p20 \cdot p22 \cdot p82 \cdot p93 + p72 \cdot p9 \cdot p90 \cdot p13 \cdot p16 \cdot p19 \cdot p20 \cdot p22 \cdot p82 \cdot p93 + p72 \cdot p9 \cdot p90 \cdot p13 \cdot p15 \cdot p18 \cdot p20 \cdot p22 \cdot p82 \cdot p93 + p72 \cdot p9 \cdot p90 \cdot p13 \cdot p16 \cdot p18 \cdot p20 \cdot p22 \cdot p82 \cdot p93 + p72 \cdot p9 \cdot p90 \cdot p12 \cdot p15 \cdot p18 \cdot p20 \cdot p22 \cdot p82 \cdot p93 + p72 \cdot p9 \cdot p90 \cdot p12 \cdot p16 \cdot p19 \cdot p20 \cdot p22 \cdot p82 \cdot p93 + p72 \cdot p9 \cdot p90 \cdot p12 \cdot p15 \cdot p19 \cdot p20 \cdot p22 \cdot p82 \cdot p93 - p19 \cdot p11 \cdot p13 \cdot p14 \cdot p16 \cdot p17 \cdot p89 \cdot p91 \cdot p92 \cdot p72 \cdot p21) / (p5 + p71) / p6 / p11 / p13 / p14 / p16 / p17 / p89^2 / p91 / p92 / (p21 + p22) / p8 / (p10 + p72) \cdot q1 - (p68 + p83) \cdot (p12 + p13) \cdot (p7 + p8) \cdot p4 \cdot p88 \cdot p71 \cdot p72 \cdot p9 \cdot p90 \cdot p62 \cdot p64 / p89 / (p5 + p71) / p6 / p11 / p13 / p67 / p93 / (p63 + p64) / p8 / (p10 + p72) \cdot q3 + p87 \cdot q4$
 k72 |--> q4
 k73 |--> $p4 \cdot p88 \cdot p71 \cdot (p7 + p8) \cdot (-p19 \cdot p11 \cdot p13 \cdot p14 \cdot p16 \cdot p17 \cdot p89 \cdot p91 \cdot p92 \cdot p72 \cdot p22 - p19 \cdot p11 \cdot p13 \cdot p14 \cdot p16 \cdot p17 \cdot p89 \cdot p91 \cdot p92 \cdot p10 \cdot p22 + p72 \cdot p9 \cdot p90 \cdot p12 \cdot p16 \cdot p18 \cdot p20 \cdot p22 \cdot p82 \cdot p93 - p19 \cdot p11 \cdot p13 \cdot p14 \cdot p16 \cdot p17 \cdot p89 \cdot p91 \cdot p92 \cdot p10 \cdot p21 + p72 \cdot p9 \cdot p90 \cdot p13 \cdot p15 \cdot p19 \cdot p20 \cdot p22 \cdot p82 \cdot p93 + p72 \cdot p9 \cdot p90 \cdot p13 \cdot p16 \cdot p19 \cdot p20 \cdot p22 \cdot p82 \cdot p93 + p72 \cdot p9 \cdot p90 \cdot p13 \cdot p15 \cdot p18 \cdot p20 \cdot p22 \cdot p82 \cdot p93 + p72 \cdot p9 \cdot p90 \cdot p13 \cdot p16 \cdot p18 \cdot p20 \cdot p22 \cdot p82 \cdot p93 + p72 \cdot p9 \cdot p90 \cdot p12 \cdot p15 \cdot p18 \cdot p20 \cdot p22 \cdot p82 \cdot p93 + p72 \cdot p9 \cdot p90 \cdot p12 \cdot p16 \cdot p19 \cdot p20 \cdot p22 \cdot p82 \cdot p93 + p72 \cdot p9 \cdot p90 \cdot p12 \cdot p15 \cdot p19 \cdot p20 \cdot p22 \cdot p82 \cdot p93 - p19 \cdot p11 \cdot p13 \cdot p14 \cdot p16 \cdot p17 \cdot p89 \cdot p91 \cdot p92 \cdot p72 \cdot p21) / (p5 + p71) / p6 / p11 / p13 / p14 / p16 / p17 / p89^2 / p91 / p92 / (p21 + p22) / p8 / (p10 + p72) \cdot q1 - (p68 + p83) \cdot (p12 + p13) \cdot (p7 + p8) \cdot p4 \cdot p88 \cdot p71 \cdot p72 \cdot p9 \cdot p90 \cdot p62 \cdot p64 / p89 / (p5 + p71) / p6 / p11 / p13 / p67 / p93 / (p63 + p64) / p8 / (p10 + p72) \cdot q3 + p88 \cdot q5$
 k74 |--> q5
 k75 |--> p71
 k76 |--> $(p15 + p16) \cdot (p18 + p19) \cdot (p12 + p13) \cdot p72 \cdot p9 \cdot p90 \cdot p20 \cdot p22 \cdot p82 \cdot p93 /$

```

p10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12
+ p13)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p67/p
93/(p63 + p64)*q3 + p89*q6
k77  |--> q6
k78  |--> (p15 + p16)*(p18 + p19)*(p12 + p13)*p72*p9*p90*p20*p22*p82*p93/(
p10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12
+ p13)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p67/p
93/(p63 + p64)*q3 + p90*q7
k79  |--> q7
k80  |--> p72
k81  |--> p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/
(p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p1
2 + p13)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p28)
/p93/p67/p13/p11*q3 + p95*q8
k82  |--> q8
k83  |--> p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/
(p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p1
2 + p13)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p28)
/p93/p67/p13/p11*q3 + p96*q9
k84  |--> q9
k85  |--> p73
k86  |--> (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*
p33*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/
p92/p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 - p97*(p68 + p83)*(p3
0 + p73)*(p12 + p13)*p26*p28*p31*p33*p62*p64*p95/p11/p13/p67/p73
/p93/(p63 + p64)/(p32 + p33)/(p27 + p28)/p29/p96*q3 + p97*q10
k87  |--> q10
k88  |--> (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*
p33*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/
p92/p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 - p75*q2 - (p68 + p83
)*(p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97*p
99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p57
*p58*p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30
*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p95*p
97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51
*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p104*p28
*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p
95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 3*p11*p33*p44*p47*p
50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p
33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 3*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p51*p59*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p51*p
59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p
44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
3*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
98*p27*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p51*p59*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p
48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p
11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p
28*p29 + 3*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p49*p46*p48*p51*p59*p

```

61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p
48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p
77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p
63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p
50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p
45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p
99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p
48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p
11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p
86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p
13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p
61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p
48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p
33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p
29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p
57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p
46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p
48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 3*p
11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p
28*p29 + 3*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p51*p57*p61*p
63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p
50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p
32*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 3*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 3*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p
45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p
99*p27*p29 + 3*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p57*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p
48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p
11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p99*p27*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p
63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p
50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p
32*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p
96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p
77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p
64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p
51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p
45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p
99*p27*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p

78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p50*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p
48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p
11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p
28*p29 + 3*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p50*p57*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p50*p57*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p
50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p
33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 3*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 3*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p47*p51*p59*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p51*p
59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p
44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
3*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
98*p27*p29 + 3*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p50*p57*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p50*p57*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p
47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p
11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p
86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p63*p73*p
13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p
61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11*p33*p44*p47*p
51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p
33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 3*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 3*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p47*p50*p59*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p
59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48
*p49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p
103*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p
73*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p46
*p48*p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p1
02*p103*p104*p28*p30*p31 + 3*p11*p32*p44*p48*p50*p57*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p50*p57
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44
*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3
*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p27*p29 + 3*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p51*p57*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47
*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50
*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32
*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96
*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46
*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4
*p11*p33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99
*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78
*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73
*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57
*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46
*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11

```

* p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28
*p29 + 3*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p98*p27*p29)/p48/p104/p93/p67/p60/p103/p57/p58/p102/p51/p49
/p100/p46/p99/p13/p11/p29/p96/p73/(p63 + p64)/(p32 + p33)/(p27 +
p28)/(p45 + p76)*q3 + p98*q11
k89  |--> q11
k90  |--> p74
k91  |--> p75
k92  |--> p76
k93  |--> p77
k94  |--> p78
k95  |--> (p69*p54*p52*p101*p61*p78*p86*p80*p50*p83*p59 + p69*p54*p52*p101
*p61*p78*p86*p80*p50*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80*
p50*p57*p83 + p69*p54*p52*p101*p61*p78*p86*p80*p50*p68*p59 + p69
*p54*p52*p101*p61*p78*p86*p80*p51*p83*p59 + p69*p54*p52*p101*p61
*p78*p86*p80*p51*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80*p51*
p57*p83 + p69*p54*p52*p101*p61*p78*p86*p80*p51*p68*p59 + p83*p67
*p60*p103*p57*p58*p102*p51*p49*p100*p54*p79*p80 + p83*p67*p60*p1
03*p57*p58*p102*p51*p49*p100*p53*p79*p80 + p83*p67*p60*p103*p57*
p58*p102*p51*p49*p100*p53*p79*p70 + p83*p67*p60*p103*p57*p58*p10
2*p51*p49*p100*p53*p69*p93*p80 + p83*p67*p60*p103*p57*p58*p102*p
51*p49*p100*p54*p79*p70 + p83*p67*p60*p103*p57*p58*p102*p51*p49*
p100*p54*p69*p93*p80)/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p
80)/p100/p49/p51/p102/p58/p57/p103/p60/p67*q3 + p93*q12
k96  |--> q12
k97  |--> p52*p86*p78*p61*p54*(p68 + p83)*(p57 + p59)*(p50 + p51)*p101/p93
/(p53 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*q3 + p101*q1
3
k98  |--> q13
k99  |--> p79
k100 |--> p80
k101 |--> p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21
+ p22)*q1 + p91*q14
k102 |--> q14
k103 |--> p81
k104 |--> p82*(p18 + p19)/p17/p89*q1 + p92*q15
k105 |--> q15
k106 |--> p82
k107 |--> p83
k108 |--> p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24
+ p25)*q1 + p94*q16
k109 |--> q16
k110 |--> p84
k111 |--> (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*
p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82

```



```

* p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*
p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82
*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p
16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93
+ p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)
*(p7 + p8)*p71*p88*p4*(p85*p2 + p85*p3 + p1*p87*p3)/p87/p1/(p5 +
p71)/p3/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p1
0 + p72)*q1 - (p12 + p13)*(p68 + p83)*p64*p62*p90*p9*p72*(p7 + p
8)*p71*p88*p4*(p85*p2 + p85*p3 + p1*p87*p3)/p89/p87/p1/(p5 + p71
)/p3/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q3

k112  |--> p85

k113  |--> p61*p78*p86*(p68 + p83)*(p57 + p59)/p103/p60/p67/p93/p57/p58/p10
2*q3 + p100*q17

k114  |--> q17

k115  |--> p86

x1     |--> (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*
p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82
*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*
p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82
*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p
16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93
+ p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)
*(p7 + p8)*p71*p88*p4*(p2 + p3)/p87/p1/(p5 + p71)/p3/p6/p11/p13/
p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 - (p68 +
p83)*(p12 + p13)*p64*p62*p90*p9*p72*(p7 + p8)*p71*p88*p4*(p2 +
p3)/p89/p87/p1/(p5 + p71)/p3/p6/p11/p13/p67/p93/(p63 + p64)/p8/(
p10 + p72)*q3

x2     |--> p87

x3     |--> p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p
22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p1
2*p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*
p10*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p1
3*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p
93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15
*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17
*p89*p91*p92*p72*p21)/(p5 + p71)/p3/p6/p11/p13/p14/p16/p17/p89^2
/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 - p4*p88*p71*(p7 + p8)*p7
2*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p89/(p5 + p71)/p3/p6/p1
1/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q3

x4     |--> (p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p1
1*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p
20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p
72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p
20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9
*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p2
2*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*
p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p9
2*p72*p21)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(
p10 + p72)*q1 - (p7 + p8)*p72*p9*p90*p62*p64*(p68 + p83)*(p12 +
p13)/p89/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*q3

x5     |--> p88

x6     |--> (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*
p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82
*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*
p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82

```

```

* p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p
16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93
+ p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)
*(p7 + p8)*p4*p88/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p91/p9
2/(p21 + p22)/p8/(p10 + p72)*q1 - (p68 + p83)*(p12 + p13)*p64*p6
2*p90*p9*p72*(p7 + p8)*p4*p88/p89/(p5 + p71)/p6/p11/p13/p67/p93/
(p63 + p64)/p8/(p10 + p72)*q3

x7    |--> p89

x8    |--> (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*
p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82
*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*
p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82
*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p
16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93
+ p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)
/p11/p13/p14/p16/p17/p89/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 -
p72*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p11/p13/p67/p93/(p63
+ p64)/p8/(p10 + p72)*q3

x9    |--> (p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p21 + p22)/
p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p12 + p13)*(p68 + p83)*p62
*p64/(p63 + p64)/p93/p67/p13/p11*q3

x10   |--> p90

x11   |--> (p18 + p19)*(p15 + p16)*p93*p82*p22*p20*(p12 + p13)*p9*p90/(p10
+ p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p68 + p
83)*p64*p62*(p12 + p13)*p9*p90/(p10 + p72)/(p63 + p64)/p93/p67/p
13/p11*q3

x12   |--> p91

x13   |--> p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p13/p14/p16/p17/p89/p92/
(p21 + p22)*q1 - (p68 + p83)*p62*p64*p91/p13/p67/p93/(p63 + p64)
*q3

x14   |--> (p15 + p16)*p82*(p18 + p19)/p17/p89/p16/p14/p92*q1

x15   |--> p92

x16   |--> p82*(p18 + p19)/p17/p89/p16*q1

x17   |--> (p18 + p19)/p17/p89*q1

x18   |--> q1

x19   |--> p93

x20   |--> p20*p93*p82*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21 + p
22)*q1

x21   |--> p94

x22   |--> p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24 + p
25)*q1

x23   |--> p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/p84/
(p24 + p25)*q1

x24   |--> p95

x25   |--> (p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p26*p95/(p27
+ p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 - (p68 +
p83)*(p12 + p13)*p64*p62*p26*p95/(p63 + p64)/(p27 + p28)/p93/p67

```

```

/p13/p11*q3

x26  |--> (p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p95*p28*p26*
        (p30 + p73)/p96/p29/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/
        p16/p14/p13/p11*q1 - (p68 + p83)*(p12 + p13)*p64*p62*p95*p28*p26
        *(p30 + p73)/p96/p29/(p63 + p64)/(p27 + p28)/p93/p73/p67/p13/p11
        *q3

x27  |--> p96

x28  |--> p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/
        (p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/p16/p14/p13/p11*q1 -
        p26*p28*p95*p62*p64*(p68 + p83)*(p12 + p13)/(p63 + p64)/(p27 +
        p28)/p93/p73/p67/p13/p11*q3

x29  |--> p97

x30  |--> (p30 + p73)*(p18 + p19)*(p15 + p16)*(p12 + p13)*p93*p82*p22*p20*
        p97*p95*p31*p28*p26/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/p92/
        p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 - (p68 + p83)*(p30 + p73)
        *(p12 + p13)*p64*p62*p97*p95*p31*p28*p26/(p63 + p64)/(p32 + p33)
        /(p27 + p28)/p96/p93/p73/p67/p29/p13/p11*q3

x31  |--> p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p18 + p19)*(p15 + p16)*
        (p30 + p73)*(p104*p98*p74*p36 + p35*p74 + p35*p37)*(p12 + p13)/p
        11/p13/p14/p16/p17/p29/p34/p36/p73/p74/p89/p91/p92/p96/p98/p104/
        (p32 + p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p34*p35/p36/p74*p75/p
        98/p104*(p37 + p74)*q2 - (p68 + p83)*(4*p11*p33*p35*p46*p48*p50*
        p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
        p33*p35*p46*p48*p50*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*
        p99*p28*p29 + 4*p11*p33*p35*p46*p48*p50*p59*p61*p63*p13*p73*p74*
        p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p46*p48*p50*p57*
        p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*
        p35*p46*p48*p50*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*
        p27*p29 + 4*p11*p33*p35*p46*p48*p50*p57*p61*p63*p13*p73*p74*p76*
        p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p46*p48*p50*p57*p61*
        p63*p13*p73*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*
        p45*p46*p48*p51*p59*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p28*
        p29 + 4*p11*p33*p35*p45*p46*p48*p51*p59*p61*p13*p64*p73*p74*p77*
        p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p59*p61*
        p63*p13*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*
        p46*p48*p51*p59*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29
        + 4*p11*p33*p35*p45*p46*p48*p51*p57*p61*p13*p64*p73*p74*p77*p78*
        p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p57*p61*p13*
        p64*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*
        p48*p51*p57*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*
        p11*p33*p35*p45*p46*p48*p51*p57*p61*p63*p13*p73*p74*p77*p78*p86*
        p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p59*p61*p13*p64*
        p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*
        p50*p59*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
        p33*p35*p45*p46*p48*p50*p59*p61*p63*p13*p73*p74*p77*p78*p86*p96*
        p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p59*p61*p63*p13*p73*
        p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p50*
        p57*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*
        p35*p45*p46*p48*p50*p57*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*
        p27*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p57*p61*p63*p13*p73*p74*
        p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p57*
        p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*
        p44*p48*p51*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*
        p29 + 4*p11*p33*p35*p44*p48*p51*p59*p61*p13*p64*p73*p74*p76*p77*
        p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p48*p51*p59*p61*p63*
        p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*
        p48*p51*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29
        + 4*p11*p33*p35*p44*p48*p51*p57*p61*p13*p64*p73*p74*p76*p77*p78*
        p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p48*p51*p57*p61*p13*p64*
        p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p48*
        p51*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*
        p11*p33*p35*p44*p48*p51*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*

```

108

109

110

111

$$\begin{aligned}
 & p_{11}p_{32}p_{35}p_{37}p_{44}p_{48}p_{50}p_{57}p_{61}p_{63}p_{13}p_{73}p_{76}p_{77}p_{78}p_{86} \\
 & p_{96}p_{98}p_{28}p_{29} + 4p_{11}p_{32}p_{35}p_{37}p_{44}p_{48}p_{50}p_{57}p_{61}p_{63}p_{13} \\
 & p_{73}p_{76}p_{77}p_{78}p_{86}p_{96}p_{98}p_{27}p_{29} + 4p_{11}p_{32}p_{35}p_{37}p_{44}p_{47} \\
 & p_{51}p_{59}p_{61}p_{13}p_{64}p_{73}p_{76}p_{77}p_{78}p_{86}p_{96}p_{98}p_{28}p_{29} + 4p_{11} \\
 & p_{32}p_{35}p_{37}p_{44}p_{47}p_{51}p_{59}p_{61}p_{13}p_{64}p_{73}p_{76}p_{77}p_{78}p_{86}p_{96} \\
 & p_{98}p_{27}p_{29} + 4p_{11}p_{32}p_{35}p_{37}p_{44}p_{47}p_{51}p_{59}p_{61}p_{63}p_{13}p_{73} \\
 & p_{76}p_{77}p_{78}p_{86}p_{96}p_{98}p_{28}p_{29} + 4p_{11}p_{32}p_{35}p_{37}p_{44}p_{47}p_{51} \\
 & p_{59}p_{61}p_{63}p_{13}p_{73}p_{76}p_{77}p_{78}p_{86}p_{96}p_{98}p_{27}p_{29} + 4p_{11}p_{32} \\
 & p_{35}p_{37}p_{44}p_{47}p_{51}p_{57}p_{61}p_{13}p_{64}p_{73}p_{76}p_{77}p_{78}p_{86}p_{96}p_{98} \\
 & p_{28}p_{29} + 4p_{11}p_{32}p_{35}p_{37}p_{44}p_{47}p_{51}p_{57}p_{61}p_{13}p_{64}p_{73}p_{76} \\
 & p_{77}p_{78}p_{86}p_{96}p_{98}p_{27}p_{29} + 4p_{11}p_{32}p_{35}p_{37}p_{44}p_{47}p_{51}p_{57} \\
 & p_{61}p_{63}p_{13}p_{73}p_{76}p_{77}p_{78}p_{86}p_{96}p_{98}p_{28}p_{29} + 4p_{11}p_{32}p_{35} \\
 & p_{37}p_{44}p_{47}p_{51}p_{57}p_{61}p_{63}p_{13}p_{73}p_{76}p_{77}p_{78}p_{86}p_{96}p_{98}p_{27} \\
 & p_{29} + 4p_{11}p_{32}p_{35}p_{37}p_{44}p_{47}p_{50}p_{59}p_{61}p_{13}p_{64}p_{73}p_{76}p_{77} \\
 & p_{78}p_{86}p_{96}p_{98}p_{28}p_{29} + 4p_{11}p_{32}p_{35}p_{37}p_{44}p_{47}p_{50}p_{59}p_{61} \\
 & p_{13}p_{64}p_{73}p_{76}p_{77}p_{78}p_{86}p_{96}p_{98}p_{27}p_{29} + 4p_{11}p_{32}p_{35}p_{37} \\
 & p_{44}p_{47}p_{50}p_{59}p_{61}p_{63}p_{13}p_{73}p_{76}p_{77}p_{78}p_{86}p_{96}p_{98}p_{28}p_{29} \\
 & + 4p_{11}p_{32}p_{35}p_{37}p_{44}p_{47}p_{50}p_{59}p_{61}p_{63}p_{13}p_{73}p_{76}p_{77}p_{78} \\
 & p_{86}p_{96}p_{98}p_{27}p_{29} + 4p_{11}p_{32}p_{35}p_{37}p_{44}p_{47}p_{50}p_{57}p_{61}p_{13} \\
 & p_{64}p_{73}p_{76}p_{77}p_{78}p_{86}p_{96}p_{98}p_{28}p_{29} + 4p_{11}p_{32}p_{35}p_{37}p_{44} \\
 & p_{47}p_{50}p_{57}p_{61}p_{13}p_{64}p_{73}p_{76}p_{77}p_{78}p_{86}p_{96}p_{98}p_{27}p_{29} + 4 \\
 & p_{11}p_{32}p_{35}p_{37}p_{44}p_{47}p_{50}p_{57}p_{61}p_{63}p_{13}p_{73}p_{76}p_{77}p_{78}p_{86} \\
 & p_{96}p_{98}p_{28}p_{29} + 4p_{11}p_{32}p_{35}p_{37}p_{44}p_{47}p_{50}p_{57}p_{61}p_{63}p_{13} \\
 & p_{73}p_{76}p_{77}p_{78}p_{86}p_{96}p_{98}p_{27}p_{29} + p_{33}p_{35}p_{46}p_{48}p_{49}p_{51}p_5 \\
 & 7p_{58}p_{60}p_{62}p_{13}p_{64}p_{74}p_{76}p_{95}p_{26}p_{97}p_{99}p_{100}p_{102}p_{103}p_{10} \\
 & 4p_{28}p_{30}p_{31} + p_{33}p_{35}p_{46}p_{48}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{13}p_{64} \\
 & p_{73}p_{74}p_{76}p_{95}p_{26}p_{97}p_{99}p_{100}p_{102}p_{103}p_{104}p_{28}p_{31} + p_{33}p_3 \\
 & 5p_{46}p_{48}p_{12}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{64}p_{74}p_{76}p_{95}p_{26}p_{97}p_9 \\
 & 9p_{100}p_{102}p_{103}p_{104}p_{28}p_{30}p_{31} + p_{33}p_{35}p_{46}p_{48}p_{12}p_{49}p_{51} \\
 & p_{57}p_{58}p_{60}p_{62}p_{64}p_{73}p_{74}p_{76}p_{95}p_{26}p_{97}p_{99}p_{100}p_{102}p_{103}p_ \\
 & 104p_{28}p_{31} + p_{33}p_{35}p_{45}p_{46}p_{48}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{13}p_6 \\
 & 4p_{74}p_{95}p_{26}p_{97}p_{99}p_{100}p_{102}p_{103}p_{104}p_{28}p_{30}p_{31} + p_{33}p_{35} \\
 & p_{45}p_{46}p_{48}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{13}p_{64}p_{73}p_{74}p_{95}p_{26}p_{97} \\
 & p_{99}p_{100}p_{102}p_{103}p_{104}p_{28}p_{31} + p_{33}p_{35}p_{45}p_{46}p_{48}p_{12}p_{49}p_5 \\
 & 1p_{57}p_{58}p_{60}p_{62}p_{64}p_{74}p_{95}p_{26}p_{97}p_{99}p_{100}p_{102}p_{103}p_{104}p_2 \\
 & 8p_{30}p_{31} + p_{33}p_{35}p_{45}p_{46}p_{48}p_{12}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{64} \\
 & p_{73}p_{74}p_{95}p_{26}p_{97}p_{99}p_{100}p_{102}p_{103}p_{104}p_{28}p_{31} + p_{33}p_{35}p_3 \\
 & 7p_{46}p_{48}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{13}p_{64}p_{76}p_{95}p_{26}p_{97}p_{99}p_1 \\
 & 00p_{102}p_{103}p_{104}p_{28}p_{30}p_{31} + p_{33}p_{35}p_{37}p_{46}p_{48}p_{49}p_{51}p_{57} \\
 & p_{58}p_{60}p_{62}p_{13}p_{64}p_{73}p_{76}p_{95}p_{26}p_{97}p_{99}p_{100}p_{102}p_{103}p_{104} \\
 & p_{28}p_{31} + p_{33}p_{35}p_{37}p_{46}p_{48}p_{12}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{64}p_7 \\
 & 6p_{95}p_{26}p_{97}p_{99}p_{100}p_{102}p_{103}p_{104}p_{28}p_{30}p_{31} + p_{33}p_{35}p_{37} \\
 & p_{46}p_{48}p_{12}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{64}p_{73}p_{76}p_{95}p_{26}p_{97}p_{99} \\
 & p_{100}p_{102}p_{103}p_{104}p_{28}p_{31} + p_{33}p_{35}p_{37}p_{45}p_{46}p_{48}p_{49}p_{51}p_5 \\
 & 7p_{58}p_{60}p_{62}p_{13}p_{64}p_{95}p_{26}p_{97}p_{99}p_{100}p_{102}p_{103}p_{104}p_{28}p_3 \\
 & 0p_{31} + p_{33}p_{35}p_{37}p_{45}p_{46}p_{48}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{13}p_{64} \\
 & p_{73}p_{95}p_{26}p_{97}p_{99}p_{100}p_{102}p_{103}p_{104}p_{28}p_{31} + p_{33}p_{35}p_{37}p_4 \\
 & 5p_{46}p_{48}p_{12}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{64}p_{95}p_{26}p_{97}p_{99}p_{100}p_ \\
 & 102p_{103}p_{104}p_{28}p_{30}p_{31} + p_{33}p_{35}p_{37}p_{45}p_{46}p_{48}p_{12}p_{49}p_{51} \\
 & p_{57}p_{58}p_{60}p_{62}p_{64}p_{73}p_{95}p_{26}p_{97}p_{99}p_{100}p_{102}p_{103}p_{104}p_{28} \\
 & p_{31} + p_{33}p_{36}p_{46}p_{48}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{13}p_{64}p_{74}p_{76}p_9 \\
 & 5p_{26}p_{97}p_{98}p_{99}p_{100}p_{102}p_{103}p_{104}^2p_{28}p_{30}p_{31} + p_{33}p_{36}p_4 \\
 & 6p_{48}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{13}p_{64}p_{73}p_{74}p_{76}p_{95}p_{26}p_{97}p_9 \\
 & 8p_{99}p_{100}p_{102}p_{103}p_{104}^2p_{28}p_{31} + p_{33}p_{36}p_{46}p_{48}p_{12}p_{49}p_5 \\
 & 1p_{57}p_{58}p_{60}p_{62}p_{64}p_{74}p_{76}p_{95}p_{26}p_{97}p_{98}p_{99}p_{100}p_{102}p_{103} \\
 & p_{104}^2p_{28}p_{30}p_{31} + p_{33}p_{36}p_{46}p_{48}p_{12}p_{49}p_{51}p_{57}p_{58}p_{60}p_6 \\
 & 2p_{64}p_{73}p_{74}p_{76}p_{95}p_{26}p_{97}p_{98}p_{99}p_{100}p_{102}p_{103}p_{104}^2p_{28} \\
 & p_{31} + p_{33}p_{36}p_{45}p_{46}p_{48}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{13}p_{64}p_{74}p_9 \\
 & 5p_{26}p_{97}p_{98}p_{99}p_{100}p_{102}p_{103}p_{104}^2p_{28}p_{30}p_{31} + p_{33}p_{36}p_4 \\
 & 5p_{46}p_{48}p_{49}p_{51}p_{57}p_{58}p_{60}p_{62}p_{13}p_{64}p_{73}p_{74}p_{95}p_{26}p_{97}p_9 \\
 & 8p_{99}p_{100}p_{102}p_{103}p_{104}^2p_{28}p_{31} + p_{33}p_{36}p_{45}p_{46}p_{48}p_{12}p_{49}p_4 \\
 & 9p_{51}p_{57}p_{58}p_{60}p_{62}p_{64}p_{74}p_{95}p_{26}p_{97}p_{98}p_{99}p_{100}p_{102}p_{103} \\
 & p_{104}^2p_{28}p_{30}p_{31} + p_{33}p_{36}p_{45}p_{46}p_{48}p_{12}p_{49}p_{51}p_{57}p_{58}p_6 \\
 & 0p_{62}p_{64}p_{73}p_{74}p_{95}p_{26}p_{97}p_{98}p_{99}p_{100}p_{102}p_{103}p_{104}^2p_{28} \\
 & p_{31})/p_{104}^2/p_{60}/p_{103}/p_{57}/p_{58}/p_{102}/p_{51}/p_{49}/p_{100}/p_{48}/p_{46}/p_{99}/p_{67}/p \\
 & 93/p_{13}/p_{11}/p_{29}/p_{96}/p_{73}/p_{74}/(p_{63} + p_{64})/(p_{32} + p_{33})/(p_{27} + p_{28})/(\\
 & p_{45} + p_{76})/p_{36}/p_{98}/p_{34}q_3
 \end{aligned}$$


```

x32    |--> p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p30 + p73)*(p18 + p19)*
          (p15 + p16)*(p12 + p13)*(p37 + p74)/p11/p13/p14/p16/p17/p29/p36/
          p73/p74/p89/p91/p92/p96/p98/p104/(p32 + p33)/(p27 + p28)/(p21 +
          p22)*q1 - 2/p36/p74*p75/p98/p104*(p37 + p74)*q2 - (p68 + p83)*(p
          33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97*p99*p
          26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p57*p58
          *p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31
          + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p95*p97*p
          99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p12
          *p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30
          *p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p95*p
          97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p11*p33*p44*p47*p50*p
          59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p
          44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
          4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p
          98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p
          78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*p73*p
          13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59*p
          61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p
          48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p
          11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p
          27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p
          86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p
          76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p
          63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p
          51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p
          32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p
          29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
          96*p98*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p
          77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p
          63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p
          51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p
          45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 +
          4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p
          99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p
          78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p
          73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p
          59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p
          46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p
          11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p
          28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p
          86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p
          76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p
          63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p
          50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
          33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p
          29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p
          96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p
          77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p
          64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p48*p51*p
          50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
          33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p
          29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p
          96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p
          77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p
          64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p48*p51*p
          50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p
          33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p
          29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
          96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*p
          77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p

```

73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p50*p
59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p
44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
98*p28*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p
46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p
11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p
27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p
51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p
59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p
44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p
99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p
78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p
73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p
57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p
46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p
11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p
27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p
50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p
33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p
29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p
44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p
98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p
78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p
47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p
11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p
27*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p
63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p
50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p
32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p63*p73*p13*p
77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p
63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p47*p51*p
57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p
44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48*p49
*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p103*
p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p
13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p46*p48

```

*p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p102*p
103*p104*p28*p30*p31 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47
*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11
*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27
*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p64
*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51
*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32
*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77
*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73
*p13*p76*p77
*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46
*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99
*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48
*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11
*p33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27
*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13
*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61
*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48
*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32
*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29)*(p37 + p74)/p98/p36/(p63 + p64)/(p45 + p76)/(p32 +
p33)/(p27 + p28)/p74/p73/p96/p29/p11/p13/p93/p67/p99/p46/p48/p1
00/p49/p51/p102/p58/p57/p103/p60/p104^2*q3

```

x33 |--> p98

x34 |--> (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*
p33*p31*p28*p26*p22*p20/p11/p13/p14/p16/p17/p29/p73/p74/p89/p91/
p92/p96/(p32 + p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p74*p75*q2 -
(p68 + p83)*(p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76
*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p
49*p51*p57*p58*p60*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p1
04*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73
*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p
48*p49*p51*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p10
3*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62
*p64*p73*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p11*p33
*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44
*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4
*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48
*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11
*p32*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27
*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48
*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33

*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96
*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63
*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51
*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45
*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4
*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99
*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78
*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48
*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11
*p33*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27
*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13
*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61
*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48
*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33
*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96
*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p57
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46
*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99
*p28*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p59*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48
*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11
*p33*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27
*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51
*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32
*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p32*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p50*p57
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46
*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99
*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78
*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p45*p46
*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11
*p32*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27
*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51
*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32
*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p32*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77
*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63
*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51
*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45
*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99
*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78
*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61

*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48
*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11
*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27
*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p64
*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50
*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33
*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44
*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4
*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p57*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47
*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11
*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27
*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13
*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61
*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48
*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33
*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44
*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p
33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p
100*p102*p103*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60
*p62*p64*p73*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31
+ p33*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p
26*p100*p102*p103*p104*p28*p30*p31 + 4*p11*p32*p44*p48*p50*p57*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p
48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p
11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p
28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p
63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p
51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p
32*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p
46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p32*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p
48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p
11*p33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p
13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p
61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p
48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p
32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p
29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p

```

96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29)/(p63 + p64)/(p45 + p76)/(p32 + p33)/
(p27 + p28)/p74/p73/p96/p29/p11/p13/p93/p67/p99/p46/p48/p100/p49
/p51/p102/p58/p57/p103/p60/p104*q3

x35  |--> (p41 + p75)/p40/p104/p98*q2
x36  |--> q2
x37  |--> p77*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)*(p47 + p48)/
p99/p46/p100/p49/p51/p102/p58/p57/p103/p60/p67/p93/p104^2/p48*q3
x38  |--> p44*p98*(p47 + p48)*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*
p61*p77/p48/p104/p93/p67/p60/p103/p57/p58/p102/p51/p49/p100/p46/
p99/(p45 + p76)*q3
x39  |--> p99
x40  |--> (p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61*p77/p100/p49/p51
/p102/p58/p57/p103/p60/p67/p93/p104/p48*q3
x41  |--> (p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61/p104/p93/p67/p60
/p103/p57/p58/p102/p51/p49/p100*q3
x42  |--> p100
x43  |--> p61*p78*p86*(p68 + p83)*(p57 + p59)/p67/p93/p60/p103/p57/p58/p10
2/p51*q3
x44  |--> p61*p78*(p68 + p83)*(p57 + p59)*(p56 + p86)/p67/p93/p60/p103/p57
/p58/p102/p55*q3
x45  |--> p101
x46  |--> p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p93/(p5
3 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*q3
x47  |--> (p79*p80 + p66*p70 + p66*p80 + p79*p70 + p69*p93*p80)*p54*p52*p1
01*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p67/p60/p103/
p57/p58/p102/p51/p49/p100/(p79*p80 + p79*p70 + p69*p93*p80)/(p53
+ p54)/p93/p65*q3
x48  |--> p78*(p57 + p59)*(p68 + p83)*p61/p103/p60/p67/p93/p57/p58/p102*q3
x49  |--> p102
x50  |--> p78*(p68 + p83)*p61/p103/p60/p67/p93/p57*q3
x51  |--> (p68 + p83)*p61/p103/p60/p67/p93*q3
x52  |--> p103
x53  |--> (p68 + p83)/p67/p93*q3
x54  |--> p62*p91*(p68 + p83)/p67/p93/(p63 + p64)*q3
x55  |--> (p70 + p80)*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p5
0 + p51)/p93/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/
p49/p51/p102/p58/p57/p103/p60/p67*q3
x56  |--> q3
x57  |--> p69*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)
/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p49/p51/p102
/p58/p57/p103/p60/p67*q3
x58  |--> p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/p81/
(p21 + p22)*q1

```

```

x59  |--> (p41*p39 + p104*p40*p98*p75 + p75*p39)/c1/k38/p98/p40/p104*q2 +
          2*p77*p86*p78*p61*(p57 + p59)*(p50 + p51)*(p68 + p83)*(p46*p99*p
          76*p48 + p46*p99*p45*p48 + p98*p44*p76*p48 + p98*p44*p76*p47)/p1
          04/(p45 + p76)/p67/p60/p103/p57/p58/p102/p51/p49/p100/p93/p48/p4
          6/p99/k38/c1*q3

x60  |--> p77*p86*p78*p61*(p50 + p51)*(p68 + p83)*(p57 + p59)*(p46*p104*p9
          9*p45*p48 + p43*p45*p48 + p44*p98*p104*p76*p48 + p46*p104*p99*p7
          6*p48 + p44*p98*p104*p76*p47 + p43*p76*p48 + p43*p45*p47 + p43*p
          76*p47)/c1/k42/p46/p48/p49/p51/p57/p58/p60/p67/p93/p99/p100/p102
          /p103/p104^2/(p45 + p76)*q3

c1   |--> p104

```

To resolve the pseudospecies, we require that

```

psi_py(x[59]) = psi_py(x[32]^2) and
psi_py(x[60]) = psi_py(x[35]^2).

```

In other words, we require that

```

ybar[42] = ybar[21]^2 and (1)
ybar[43] = ybar[23]^2.    (2)

```

To solve these two equations, note that

```

> indets(ybar[23]) intersect convert(vq,set) = {q[2]}
> indets(ybar[43]) intersect convert(vq,set) = {q[3]}
> indets(ybar[21]) intersect convert(vq,set) = {q[1],q[2],q[3]}
> indets(ybar[42]) intersect convert(vq,set) = {q[2],q[3]}

```

In other words, we can first solve Equation (1) for $q[3]$, then use that solution to solve Equation (2) for $q[2]$. The solution to Equation(1) is given by

```

q[3] = -b1/b2

```

where

```

b[1] = -(p41 + p75)^2/p40^2/p104^2/p98^2*q2^2

b[2] = p77*p86*p78*p61*(p50 + p51)*(p68 + p83)*(p57 + p59)*(p46*p104*p99*p45
      *p48 + p43*p45*p48 + p44*p98*p104*p76*p48 + p46*p104*p99*p76*p48 + p4
      4*p98*p104*p76*p47 + p43*p76*p48 + p43*p45*p47 + p43*p76*p47)/c1/k42/
      p46/p48/p49/p51/p57/p58/p60/p67/p93/p99/p100/p102/p103/p104^2/(p45 +
      p76)

```

Substituting this expression for $q[3]$ into Equation (2) and solving for $q[2]$ yields:

```

q[2] = RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)

```

where

```

a[1] = -p20^2*p22^2*p26^2*p28^2*p31^2*p33^2*p82^2*p93^2*p95^2*p97^2*(p30 + p
      73)^2*(p18 + p19)^2*(p15 + p16)^2*(p12 + p13)^2*(p37 + p74)^2/p11^2/p
      13^2/p14^2/p16^2/p17^2/p29^2/p36^2/p73^2/p74^2/p89^2/p91^2/p92^2/p96^
      2/p98^2/p104^2/(p32 + p33)^2/(p27 + p28)^2/(p21 + p22)^2*q1^2

a[2] = (p41*p39 + p104*p40*p98*p75 + p75*p39)/c1/k38/p98/p40/p104 + 4*p20*p2
      2*p26*p28*p31*p33*p82*p93*p95*p97*(p30 + p73)*(p18 + p19)*(p15 + p16)
      *(p12 + p13)*(p37 + p74)^2/p11/p13/p14/p16/p17/p29/p36^2/p73/p74^2/p8
      9/p91/p92/p96/p98^2/p104^2/(p32 + p33)/(p27 + p28)/(p21 + p22)*q1*p75

```

```

a[3] = 2/k38*k42/p40^2/p98^2/p104*(p41 + p75)^2*(p46*p99*p76*p48 + p46*p99*p
45*p48 + p98*p44*p76*p48 + p98*p44*p76*p47)/(p46*p104*p99*p45*p48 + p
43*p45*p48 + p44*p98*p104*p76*p48 + p46*p104*p99*p76*p48 + p44*p98*p1
04*p76*p47 + p43*p76*p48 + p43*p45*p47 + p43*p76*p47) + 2/(p63 + p64)
*c1*k42/p11^2/p13^2/p14/p16/p17*p20*p22*p26*p28/p29^2*p31*p33/p36^2/p
40^2/p61/p73^2/p74^2/p77/p78*p82/p86/p89/p91/p92*p93*p95/p96^2*p97/p9
8^4/p104^3*(p41 + p75)^2*q1/(p32 + p33)^2*(p37 + p74)^2*(p33*p46*p48*
p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97*p99*p26*p100*p102*p10
3*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p13*p95*
p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51
*p57*p58*p60*p62*p64*p73*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*
p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26
*p100*p102*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p5
8*p60*p62*p64*p73*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p11
*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p
27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p9
6*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78
*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*p73*p13*p76*
p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p6
3*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*
p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p
44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p1
1*p32*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p32*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*
p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p7
8*p86*p96*p98*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*
p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p
61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p5
1*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46
*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*
p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p
11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p2
9 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99
*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*
p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p7
6*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p4
6*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33
*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*
p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p
13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p7
3*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*
p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p
48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
3*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*
p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p8
6*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*
p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p6
1*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51
*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*

```


121

122

123

124

125

126

$$\begin{aligned}
& 7*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13 \\
& *p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64* \\
& p73*p13*p76*p77*p78*p86*p96*p98*p27*p29)^2/(p27 + p28)^2/(p50 + p51)^2 \\
& 2/(p57 + p59)^2/(p46*p104*p99*p45*p48 + p43*p45*p48 + p44*p98*p104*p7 \\
& 6*p48 + p46*p104*p99*p76*p48 + p44*p98*p104*p76*p47 + p43*p76*p48 + p \\
& 43*p45*p47 + p43*p76*p47)^2
\end{aligned}$$

We can now update the forward map psi_py and the steady state reaction velocity vector, vbar

```

.
k1    |-->  p1
k2    |-->  p2
k3    |-->  p3
k4    |-->  p4
k5    |-->  p5
k6    |-->  p6
k7    |-->  p7
k8    |-->  p8
k9    |-->  p9
k10   |-->  p10
k11   |-->  p11
k12   |-->  p12
k13   |-->  p13
k14   |-->  p14
k15   |-->  p15
k16   |-->  p16
k17   |-->  p17
k18   |-->  p18
k19   |-->  p19
k20   |-->  p20
k21   |-->  p21
k22   |-->  p22
k23   |-->  p23
k24   |-->  p24
k25   |-->  p25
k26   |-->  p26
k27   |-->  p27
k28   |-->  p28
k29   |-->  p29

```

| | | |
|-----|-----|-----|
| k30 | --> | p30 |
| k31 | --> | p31 |
| k32 | --> | p32 |
| k33 | --> | p33 |
| k34 | --> | p34 |
| k35 | --> | p35 |
| k36 | --> | p36 |
| k37 | --> | p37 |
| k38 | --> | p38 |
| k39 | --> | p39 |
| k40 | --> | p40 |
| k41 | --> | p41 |
| k42 | --> | p42 |
| k43 | --> | p43 |
| k44 | --> | p44 |
| k45 | --> | p45 |
| k46 | --> | p46 |
| k47 | --> | p47 |
| k48 | --> | p48 |
| k49 | --> | p49 |
| k50 | --> | p50 |
| k51 | --> | p51 |
| k52 | --> | p52 |
| k53 | --> | p53 |
| k54 | --> | p54 |
| k55 | --> | p55 |
| k56 | --> | p56 |
| k57 | --> | p57 |
| k58 | --> | p58 |
| k59 | --> | p59 |
| k60 | --> | p60 |
| k61 | --> | p61 |
| k62 | --> | p62 |
| k63 | --> | p63 |

k64 |--> p64
 k65 |--> p65
 k66 |--> p66
 k67 |--> p67
 k68 |--> p68
 k69 |--> p69
 k70 |--> p70
 k71 |-->
$$\begin{aligned} & p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p \\ & 22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p1 \\ & 2*p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92* \\ & p10*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p1 \\ & 3*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p \\ & 93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15 \\ & *p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + \\ & p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17 \\ & *p89*p91*p92*p72*p21)/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p9 \\ & 1/p92/(p21 + p22)/p8/(p10 + p72)*q1 + (p68 + p83)*(p12 + p13)*(p \\ & 7 + p8)*p4*p88*p71*p72*p9*p90*p62*p64/p89/(p5 + p71)/p6/p11/p13/ \\ & p67/p93/(p63 + p64)/p8/(p10 + p72)*b1/b2 + p87*q4 \end{aligned}$$

 k72 |--> q4
 k73 |-->
$$\begin{aligned} & p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p \\ & 22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p1 \\ & 2*p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92* \\ & p10*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p1 \\ & 3*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p \\ & 93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15 \\ & *p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + \\ & p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17 \\ & *p89*p91*p92*p72*p21)/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p9 \\ & 1/p92/(p21 + p22)/p8/(p10 + p72)*q1 + (p68 + p83)*(p12 + p13)*(p \\ & 7 + p8)*p4*p88*p71*p72*p9*p90*p62*p64/p89/(p5 + p71)/p6/p11/p13/ \\ & p67/p93/(p63 + p64)/p8/(p10 + p72)*b1/b2 + p88*q5 \end{aligned}$$

 k74 |--> q5
 k75 |--> p71
 k76 |-->
$$\begin{aligned} & (p15 + p16)*(p18 + p19)*(p12 + p13)*p72*p9*p90*p20*p22*p82*p93/(\\ & p10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p12 \\ & + p13)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p67/p \\ & 93/(p63 + p64)*b1/b2 + p89*q6 \end{aligned}$$

 k77 |--> q6
 k78 |-->
$$\begin{aligned} & (p15 + p16)*(p18 + p19)*(p12 + p13)*p72*p9*p90*p20*p22*p82*p93/(\\ & p10 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p12 \\ & + p13)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p67/p \\ & 93/(p63 + p64)*b1/b2 + p90*q7 \end{aligned}$$

 k79 |--> q7
 k80 |--> p72
 k81 |-->
$$\begin{aligned} & p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/ \\ & (p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p1 \\ & 2 + p13)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p28) \\ & /p93/p67/p13/p11*b1/b2 + p95*q8 \end{aligned}$$

```

k82    |-->  q8

k83    |-->  p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/
          (p27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p1
          2 + p13)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p28)
          /p93/p67/p13/p11*b1/b2 + p96*q9

k84    |-->  q9

k85    |-->  p73

k86    |-->  (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*
          p33*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/
          p92/p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 + p97*(p68 + p83)*(p3
          0 + p73)*(p12 + p13)*p26*p28*p31*p33*p62*p64*p95/p11/p13/p67/p73
          /p93/(p63 + p64)/(p32 + p33)/(p27 + p28)/p29/p96*b1/b2 + p97*q10

k87    |-->  q10

k88    |-->  (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*
          p33*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/
          p92/p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 - p75*RootOf(a1 + a2*
          _Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (p68 + p83)*(p33*p46*p48*p49
          *p51*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97*p99*p26*p100*p102*p
          103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p
          13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 + p33*p45*p46
          *p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p95*p97*p99*p26*p100*p1
          02*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p
          62*p64*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 + p33*p45
          *p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p95*p97*p99*p26*p10
          0*p102*p103*p104*p28*p31 + 3*p11*p33*p44*p47*p50*p59*p61*p63*p73
          *p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p59
          *p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44
          *p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3
          *p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
          *p27*p29 + 3*p11*p33*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78
          *p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p51*p59*p61*p64*p73*p13
          *p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p51*p59*p61
          *p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48
          *p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11
          *p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28
          *p29 + 3*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86
          *p96*p98*p27*p29 + 3*p11*p32*p44*p48*p51*p59*p61*p63*p73*p13*p76
          *p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p51*p59*p61*p63
          *p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p51
          *p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32
          *p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
          + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96
          *p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77
          *p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63
          *p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51
          *p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45
          *p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4
          *p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99
          *p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78
          *p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73
          *p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p59
          *p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46
          *p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11
          *p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28
          *p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86
          *p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p13*p76
          *p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63
          *p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48
          *p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33
          *p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29
          + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96
          *p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77

```

*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63
 *p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50
 *p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45
 *p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4
 *p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99
 *p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78
 *p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p64*p73*p13
 *p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61
 *p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48
 *p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11
 *p33*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28
 *p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86
 *p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p63*p73*p13*p76
 *p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p63
 *p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 3*p11*p32*p44*p48*p50
 *p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32
 *p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
 + 3*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96
 *p98*p28*p29 + 3*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77
 *p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p50*p59*p61*p64*p73
 *p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p50*p59
 *p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44
 *p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3
 *p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98
 *p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78
 *p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p13
 *p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p59
 *p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46
 *p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11
 *p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28
 *p29 + 3*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86
 *p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p64*p73*p13*p76
 *p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p64
 *p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51
 *p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32
 *p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29
 + 3*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96
 *p98*p28*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77
 *p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p50*p59*p61*p64*p73
 *p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p50*p59
 *p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p45
 *p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4
 *p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99
 *p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78
 *p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73
 *p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57
 *p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46
 *p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11
 *p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28
 *p29 + 3*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86
 *p96*p98*p27*p29 + 3*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76
 *p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p50*p59*p61*p64
 *p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p50
 *p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33
 *p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
 + 4*p11*p33*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
 *p98*p28*p29 + 3*p11*p33*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77
 *p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p50*p57*p61*p63*p73
 *p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p50*p57
 *p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44
 *p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3
 *p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
 *p27*p29 + 3*p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78
 *p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p51*p59*p61*p63*p73*p13
 *p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p50*p59*p61
 *p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47
 *p50*p59*p61
 *p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11
 *p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28

```

*p29 + 3*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p50*p57*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p45*p46*p48
*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32
*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p32*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96
*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77
*p78*p86*p96*p99*p27*p29 + 3*p11*p33*p44*p47*p51*p57*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p51*p57
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44
*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3
*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98
*p27*p29 + 3*p11*p33*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78
*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p59*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48*p49*p51*p57*p58*p
60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p
31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p76*p95*p97
*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p46*p48*p49*p51*p12*p
57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p
30*p31 + 3*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p51*p59*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p
51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p
32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p
29 + 3*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p98*p27*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p
57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p
46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p
48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p
11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p
27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p
51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p
77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p
63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11*p32*p44*p48*p51*p
59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p
44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29)/
p48/p104/p93/p67/p60/p103/p57/p58/p102/p51/p49/p100/p46/p99/p13/
p11/p29/p96/p73/(p63 + p64)/(p32 + p33)/(p27 + p28)/(p45 + p76)*
b1/b2 + p98*q11

```

k89 |--> q11

k90 |--> p74

k91 |--> p75

k92 |--> p76

k93 |--> p77

k94 |--> p78

k95 |--> -(p69*p54*p52*p101*p61*p78*p86*p80*p50*p83*p59 + p69*p54*p52*p10

```

1*p61*p78*p86*p80*p50*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80
*p50*p57*p83 + p69*p54*p52*p101*p61*p78*p86*p80*p50*p68*p59 + p6
9*p54*p52*p101*p61*p78*p86*p80*p51*p83*p59 + p69*p54*p52*p101*p6
1*p78*p86*p80*p51*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80*p51
*p57*p83 + p69*p54*p52*p101*p61*p78*p86*p80*p51*p68*p59 + p83*p6
7*p60*p103*p57*p58*p102*p51*p49*p100*p54*p79*p80 + p83*p67*p60*p
103*p57*p58*p102*p51*p49*p100*p53*p79*p80 + p83*p67*p60*p103*p57
*p58*p102*p51*p49*p100*p53*p79*p70 + p83*p67*p60*p103*p57*p58*p1
02*p51*p49*p100*p53*p69*p93*p80 + p83*p67*p60*p103*p57*p58*p102*
p51*p49*p100*p54*p79*p70 + p83*p67*p60*p103*p57*p58*p102*p51*p49
*p100*p54*p69*p93*p80)/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*
p80)/p100/p49/p51/p102/p58/p57/p103/p60/p67*b1/b2 + p93*q12

k96    |-->  q12

k97    |-->  -p52*p86*p78*p61*p54*(p68 + p83)*(p57 + p59)*(p50 + p51)*p101/p9
3/(p53 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*b1/b2 + p10
1*q13

k98    |-->  q13

k99    |-->  p79

k100   |-->  p80

k101   |-->  p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21
+ p22)*q1 + p91*q14

k102   |-->  q14

k103   |-->  p81

k104   |-->  p82*(p18 + p19)/p17/p89*q1 + p92*q15

k105   |-->  q15

k106   |-->  p82

k107   |-->  p83

k108   |-->  p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24
+ p25)*q1 + p94*q16

k109   |-->  q16

k110   |-->  p84

k111   |-->  (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*
p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82
*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*
p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82
*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p
16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93
+ p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)
*(p7 + p8)*p71*p88*p4*(p85*p2 + p85*p3 + p1*p87*p3)/p87/p1/(p5 +
p71)/p3/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p1
0 + p72)*q1 + (p12 + p13)*(p68 + p83)*p64*p62*p90*p9*p72*(p7 + p
8)*p71*p88*p4*(p85*p2 + p85*p3 + p1*p87*p3)/p89/p87/p1/(p5 + p71
)/p3/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*b1/b2

k112   |-->  p85

k113   |-->  -p61*p78*p86*(p68 + p83)*(p57 + p59)/p103/p60/p67/p93/p57/p58/p1
02*b1/b2 + p100*q17

k114   |-->  q17

```

```

k115  |-->  p86

x1    |-->  (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*
p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82
*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*
p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82
*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p
16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93
+ p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)
*(p7 + p8)*p71*p88*p4*(p2 + p3)/p87/p1/(p5 + p71)/p3/p6/p11/p13/
p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 + (p68 +
p83)*(p12 + p13)*p64*p62*p90*p9*p72*(p7 + p8)*p71*p88*p4*(p2 +
p3)/p89/p87/p1/(p5 + p71)/p3/p6/p11/p13/p67/p93/(p63 + p64)/p8/(
p10 + p72)*b1/b2

x2    |-->  p87

x3    |-->  p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p
22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p1
2*p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*
p10*p21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p1
3*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p
93 + p72*p9*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15
*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 +
p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17
*p89*p91*p92*p72*p21)/(p5 + p71)/p3/p6/p11/p13/p14/p16/p17/p89^2
/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 + p4*p88*p71*(p7 + p8)*p7
2*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p89/(p5 + p71)/p3/p6/p1
1/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*b1/b2

x4    |-->  (p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p1
1*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p
20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p
72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p
20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9
*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p2
2*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*
p12*p15*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p9
2*p72*p21)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(
p10 + p72)*q1 + (p7 + p8)*p72*p9*p90*p62*p64*(p68 + p83)*(p12 +
p13)/p89/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*b1/b2

x5    |-->  p88

x6    |-->  (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*
p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82
*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*
p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82
*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15
*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 +
p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)
*(p7 + p8)*p4*p88/(p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p91/p9
2/(p21 + p22)/p8/(p10 + p72)*q1 + (p68 + p83)*(p12 + p13)*p64*p6
2*p90*p9*p72*(p7 + p8)*p4*p88/p89/(p5 + p71)/p6/p11/p13/p67/p93/
(p63 + p64)/p8/(p10 + p72)*b1/b2

x7    |-->  p89

x8    |-->  (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*
p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82
*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*
p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82
*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p
16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93
+ p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)

```

```

/p11/p13/p14/p16/p17/p89/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 +
p72*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p11/p13/p67/p93/(p63
+ p64)/p8/(p10 + p72)*b1/b2

x9    |--> (p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p21 + p22)/
p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p12 + p13)*(p68 + p83)*p62
*p64/(p63 + p64)/p93/p67/p13/p11*b1/b2

x10   |--> p90

x11   |--> (p18 + p19)*(p15 + p16)*p93*p82*p22*p20*(p12 + p13)*p9*p90/(p10
+ p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p68 + p
83)*p64*p62*(p12 + p13)*p9*p90/(p10 + p72)/(p63 + p64)/p93/p67/p
13/p11*b1/b2

x12   |--> p91

x13   |--> p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p13/p14/p16/p17/p89/p92/
(p21 + p22)*q1 + (p68 + p83)*p62*p64*p91/p13/p67/p93/(p63 + p64)
*b1/b2

x14   |--> (p15 + p16)*p82*(p18 + p19)/p17/p89/p16/p14/p92*q1

x15   |--> p92

x16   |--> p82*(p18 + p19)/p17/p89/p16*q1

x17   |--> (p18 + p19)/p17/p89*q1

x18   |--> q1

x19   |--> p93

x20   |--> p20*p93*p82*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21 + p
22)*q1

x21   |--> p94

x22   |--> p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24 + p
25)*q1

x23   |--> p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/p84/
(p24 + p25)*q1

x24   |--> p95

x25   |--> (p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p26*p95/(p27
+ p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p68 +
p83)*(p12 + p13)*p64*p62*p26*p95/(p63 + p64)/(p27 + p28)/p93/p67
/p13/p11*b1/b2

x26   |--> (p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p95*p28*p26*
(p30 + p73)/p96/p29/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/
p16/p14/p13/p11*q1 + (p68 + p83)*(p12 + p13)*p64*p62*p95*p28*p26
*(p30 + p73)/p96/p29/(p63 + p64)/(p27 + p28)/p93/p73/p67/p13/p11
*b1/b2

x27   |--> p96

x28   |--> p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/
(p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/p16/p14/p13/p11*q1 +
p26*p28*p95*p62*p64*(p68 + p83)*(p12 + p13)/(p63 + p64)/(p27 +
p28)/p93/p73/p67/p13/p11*b1/b2

x29   |--> p97

x30   |--> (p30 + p73)*(p18 + p19)*(p15 + p16)*(p12 + p13)*p93*p82*p22*p20*
p97*p95*p31*p28*p26/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/p92/

```

```

p91/p89/p73/p29/p17/p16/p14/p13/p11*q1 + (p68 + p83)*(p30 + p73)
*(p12 + p13)*p64*p62*p97*p95*p31*p28*p26/(p63 + p64)/(p32 + p33)
/(p27 + p28)/p96/p93/p73/p67/p29/p13/p11*b1/b2

x31  |--> p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p18 + p19)*(p15 + p16)*
(p30 + p73)*(p104*p98*p74*p36 + p35*p74 + p35*p37)*(p12 + p13)/p
11/p13/p14/p16/p17/p29/p34/p36/p73/p74/p89/p91/p92/p96/p98/p104/
(p32 + p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p34*p35/p36/p74*p75/p
98/p104*(p37 + p74)*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_
Z^4) + (p68 + p83)*(4*p11*p33*p35*p46*p48*p50*p59*p61*p13*p64*p7
3*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p46*p48*p5
0*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p1
1*p33*p35*p46*p48*p50*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p9
6*p99*p27*p29 + 4*p11*p33*p35*p46*p48*p50*p57*p61*p13*p64*p73*p7
4*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p46*p48*p50*p5
7*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p3
3*p35*p46*p48*p50*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p9
9*p28*p29 + 4*p11*p33*p35*p46*p48*p50*p57*p61*p63*p13*p73*p74*p7
6*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p5
9*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p3
5*p45*p46*p48*p51*p59*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p2
7*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p59*p61*p63*p13*p73*p74*p7
7*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p59*p6
1*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p4
5*p46*p48*p51*p57*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p33*p35*p45*p46*p48*p51*p57*p61*p13*p64*p73*p74*p77*p7
8*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p51*p57*p61*p6
3*p13*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p4
6*p48*p51*p57*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p33*p35*p45*p46*p48*p50*p59*p61*p13*p64*p73*p74*p77*p78*p8
6*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p59*p61*p13*p6
4*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p4
8*p50*p59*p61*p63*p13*p73*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p1
1*p33*p35*p45*p46*p48*p50*p59*p61*p63*p13*p73*p74*p77*p78*p86*p9
6*p99*p27*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p57*p61*p13*p64*p7
3*p74*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p5
0*p57*p61*p13*p64*p73*p74*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p3
3*p35*p45*p46*p48*p50*p57*p61*p63*p13*p73*p74*p77*p78*p86*p96*p9
9*p28*p29 + 4*p11*p33*p35*p45*p46*p48*p50*p57*p61*p63*p13*p73*p7
4*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p44*p48*p51*p59*p6
1*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p3
5*p44*p48*p51*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p2
7*p29 + 4*p11*p33*p35*p44*p48*p51*p59*p61*p63*p13*p73*p74*p76*p7
7*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p48*p51*p59*p61*p6
3*p13*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p4
4*p48*p51*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*p2
9 + 4*p11*p33*p35*p44*p48*p51*p57*p61*p13*p64*p73*p74*p76*p77*p7
8*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p48*p51*p57*p61*p63*p1
3*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p4
8*p51*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p33*p35*p44*p48*p50*p59*p61*p13*p64*p73*p74*p76*p77*p78*p8
6*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p48*p50*p59*p61*p13*p64*p7
3*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p48*p5
0*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p1
1*p33*p35*p44*p48*p50*p59*p61*p63*p13*p73*p74*p76*p77*p78*p86*p9
6*p98*p27*p29 + 4*p11*p33*p35*p44*p48*p50*p57*p61*p13*p64*p73*p7
4*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p48*p50*p5
7*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p3
3*p35*p44*p48*p50*p57*p61*p63*p13*p73*p74*p76*p77*p78*p86*p96*p9
8*p28*p29 + 4*p11*p33*p35*p44*p48*p50*p57*p61*p63*p13*p73*p74*p7
6*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p44*p47*p51*p59*p6
1*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p3
5*p44*p47*p51*p59*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p2
7*p29 + 4*p11*p33*p35*p44*p47*p51*p59*p61*p63*p13*p73*p74*p76*p7
7*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p35*p44*p47*p51*p59*p61*p6
3*p13*p73*p74*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p35*p4
4*p47*p51*p57*p61*p13*p64*p73*p74*p76*p77*p78*p86*p96*p98*p28*p2
9 + 4*p11*p33*p35*p44*p47*p51*p57*p61*p13*p64*p73*p74*p76*p77*p7

```


137

138

139

140

8 + 4*p11*p32*p35*p37*p44*p47*p50*p57*p61*p13*p64*p73*p76*p77*p79
+ p86*p96*p98*p28*p29 + 4*p11*p32*p35*p37*p44*p47*p50*p57*p61*p13
*p64*p73*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p35*p37*p4
4*p47*p50*p57*p61*p63*p13*p73*p76*p77*p78*p86*p96*p98*p28*p29 +
4*p11*p32*p35*p37*p44*p47*p50*p57*p61*p63*p13*p73*p76*p77*p78*p8
6*p96*p98*p27*p29 + p33*p35*p46*p48*p49*p51*p57*p58*p60*p62*p13*
p64*p74*p76*p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p3
3*p35*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p74*p76*p95*p2
6*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p35*p46*p48*p12*p49
p51*p57*p58*p60*p62*p64*p74*p76*p95*p26*p97*p99*p100*p102*p103*
p104*p28*p30*p31 + p33*p35*p46*p48*p12*p49*p51*p57*p58*p60*p62*p6
4*p73*p74*p76*p95*p26*p97*p99*p100*p102*p103*p104*p28*p31 + p33*
p35*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p74*p95*p26*p97*
p99*p100*p102*p103*p104*p28*p30*p31 + p33*p35*p45*p46*p48*p49*p5
1*p57*p58*p60*p62*p13*p64*p73*p74*p95*p26*p97*p99*p100*p102*p103
*p104*p28*p31 + p33*p35*p45*p46*p48*p12*p49*p51*p57*p58*p60*p62*
p64*p74*p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p33*p3
5*p45*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p73*p74*p95*p26*p9
7*p99*p100*p102*p103*p104*p28*p31 + p33*p35*p37*p46*p48*p49*p51*
p57*p58*p60*p62*p13*p64*p76*p95*p26*p97*p99*p100*p102*p103*p104*
p28*p30*p31 + p33*p35*p37*p46*p48*p49*p51*p57*p58*p60*p62*p13*p6
4*p73*p76*p95*p26*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p35*
p37*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p76*p95*p26*p97*p99*
p100*p102*p103*p104*p28*p30*p31 + p33*p35*p37*p46*p48*p12*p49*p5
1*p57*p58*p60*p62*p64*p73*p76*p95*p26*p97*p99*p100*p102*p103*p10
4*p28*p31 + p33*p35*p37*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*
p64*p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p33*p35*p3
7*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p95*p26*p97*p9
9*p100*p102*p103*p104*p28*p31 + p33*p35*p37*p45*p46*p48*p12*p49*
p51*p57*p58*p60*p62*p64*p95*p26*p97*p99*p100*p102*p103*p104*p28*
p30*p31 + p33*p35*p37*p45*p46*p48*p12*p49*p51*p57*p58*p60*p62*p6
4*p73*p95*p26*p97*p99*p100*p102*p103*p104*p28*p31 + p33*p36*p46*
p48*p49*p51*p57*p58*p60*p62*p13*p64*p74*p76*p95*p26*p97*p98*p99*
p100*p102*p103*p104^2*p28*p30*p31 + p33*p36*p46*p48*p49*p51*p57*
p58*p60*p62*p13*p64*p73*p74*p76*p95*p26*p97*p98*p99*p100*p102*p1
03*p104^2*p28*p31 + p33*p36*p46*p48*p12*p49*p51*p57*p58*p60*p62*
p64*p74*p76*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p30*p3
1 + p33*p36*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p73*p74*p76*
p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p31)/p104^2/p60/p1
03/p57/p58/p102/p51/p49/p100/p48/p46/p99/p67/p93/p13/p11/p29/p96
/p73/p74/(p63 + p64)/(p32 + p33)/(p27 + p28)/(p45 + p76)/p36/p98
/p34*b1/b2

```
x32 |--> p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p30 + p73)*(p18 + p19)*
(p15 + p16)*(p12 + p13)*(p37 + p74)/p11/p13/p14/p16/p17/p29/p36/
p73/p74/p89/p91/p92/p96/p98/p104/(p32 + p33)/(p27 + p28)/(p21 +
p22)*q1 - 2/p36/p74*p75/p98/p104*(p37 + p74)*RootOf(a1 + a2*_Z +
a3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (p68 + p83)*(p33*p46*p48*p49*p51
*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97*p99*p26*p100*p102*p103*
p104*p28*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p13*p
95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 + p33*p45*p46*p48
*p49*p51*p57*p58*p60*p62*p64*p73*p13*p95*p97*p99*p26*p100*p102*p
103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p
64*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 + p33*p45*p46
*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p95*p97*p99*p26*p100*p1
02*p103*p104*p28*p31 + 4*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p59*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47
*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11
*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27
*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86
```

*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51
*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33
*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44
*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4
*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99
*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78
*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73
*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57
*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46
*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11
*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86
*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61
*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48
*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33
*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77
*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51
*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45
*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99
*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78
*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73
*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57
*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46
*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11
*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27
*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51
*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33
*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p48*p50*p57
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44
*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4
*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p59*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48
*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11
*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27
*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61
*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48
*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33
*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77
*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p59
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46
*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4

*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p59*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p45*p46
*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11
*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27
*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13
*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61
*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48
*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33
*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p59
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44
*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4
*p11*p33*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78
*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p57*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47
*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11
*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27
*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50
*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32
*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p45*p46*p48*p50
*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45
*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p32*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99
*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78
*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47
*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11
*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27
*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48*p49*p51*p57*p58*p60*p
62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 +
p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p76*p95*p97*p99
*p26*p100*p102*p103*p104*p28*p31 + p33*p46*p48*p49*p51*p12*p57*p
58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p
31 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p58*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p
59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p
44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
98*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p
48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p
11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p

```
x34      |--> (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*
p33*p31*p28*p26*p22*p20/p11/p13/p14/p16/p17/p29/p73/p74/p89/p91/
p92/p96/(p32 + p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p74*p75*Root0
f(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (p68 + p83)*(p33*p
46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97*p99*p26*p
100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60
*p62*p64*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 + p
33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p95*p97*p99*p
26*p100*p102*p103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p12*p57
*p58*p60*p62*p64*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31
+ p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p73*p95*p97*p
99*p26*p100*p102*p103*p104*p28*p31 + 4*p11*p33*p44*p47*p50*p59*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p
47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p
11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p
28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p
51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p
33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p
59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p
44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
4*p11*p32*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p
98*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p
73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p
59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p
46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p
11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p
27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p
86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*p73*p
13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p
61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p
48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p
45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p
```


145

```

32*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p
45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p63*p
73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p47*p51*p57*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p
47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p
11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p
28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48*p49*p51
*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104
*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p
76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p46*p48*p49
*p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p102*p103*
p104*p28*p30*p31 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51
*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32
*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96
*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46
*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4
*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99
*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48
*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11
*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64
*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51
*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33
*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96
*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63
*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50
*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44
*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p27*p29)/(p63 + p64)/(p45 + p76)/(p32 + p33)/(p27 + p28)/p74/p7
3/p96/p29/p11/p13/p93/p67/p99/p46/p48/p100/p49/p51/p102/p58/p57/
p103/p60/p104*b1/b2

```

```

x35  |--> (p41 + p75)/p40/p104/p98*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 +
a5*_Z^4)
x36  |--> RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)
x37  |--> -p77*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)*(p47 + p48)
/p99/p46/p100/p49/p51/p102/p58/p57/p103/p60/p67/p93/p104^2/p48*b
1/b2
x38  |--> -p44*p98*(p47 + p48)*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78
*p61*p77/p48/p104/p93/p67/p60/p103/p57/p58/p102/p51/p49/p100/p46

```

```

                /p99/(p45 + p76)*b1/b2
x39  |-->  p99
x40  |-->  -(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61*p77/p100/p49/p5
1/p102/p58/p57/p103/p60/p67/p93/p104/p48*b1/b2
x41  |-->  -(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61/p104/p93/p67/p6
0/p103/p57/p58/p102/p51/p49/p100*b1/b2
x42  |-->  p100
x43  |-->  -p61*p78*p86*(p68 + p83)*(p57 + p59)/p67/p93/p60/p103/p57/p58/p1
02/p51*b1/b2
x44  |-->  -p61*p78*(p68 + p83)*(p57 + p59)*(p56 + p86)/p67/p93/p60/p103/p5
7/p58/p102/p55*b1/b2
x45  |-->  p101
x46  |-->  -p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p93/(p
53 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*b1/b2
x47  |-->  -(p79*p80 + p66*p70 + p66*p80 + p79*p70 + p69*p93*p80)*p54*p52*p
101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p67/p60/p103
/p57/p58/p102/p51/p49/p100/(p79*p80 + p79*p70 + p69*p93*p80)/(p5
3 + p54)/p93/p65*b1/b2
x48  |-->  -p78*(p57 + p59)*(p68 + p83)*p61/p103/p60/p67/p93/p57/p58/p102*b
1/b2
x49  |-->  p102
x50  |-->  -p78*(p68 + p83)*p61/p103/p60/p67/p93/p57*b1/b2
x51  |-->  -(p68 + p83)*p61/p103/p60/p67/p93*b1/b2
x52  |-->  p103
x53  |-->  -(p68 + p83)/p67/p93*b1/b2
x54  |-->  -p62*p91*(p68 + p83)/p67/p93/(p63 + p64)*b1/b2
x55  |-->  -(p70 + p80)*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p
50 + p51)/p93/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100
/p49/p51/p102/p58/p57/p103/p60/p67*b1/b2
x56  |-->  -b1/b2
x57  |-->  -p69*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51
)/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p49/p51/p10
2/p58/p57/p103/p60/p67*b1/b2
x58  |-->  p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/p81/
(p21 + p22)*q1
x59  |-->  (p41*p39 + p104*p40*p98*p75 + p75*p39)/c1/k38/p98/p40/p104*RootO
f(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)-2*p77*p86*p78*p61*(p
57 + p59)*(p50 + p51)*(p68 + p83)*(p46*p99*p76*p48 + p46*p99*p45
*p48 + p98*p44*p76*p48 + p98*p44*p76*p47)/p104/(p45 + p76)/p67/p
60/p103/p57/p58/p102/p51/p49/p100/p93/p48/p46/p99/k38/c1*b1/b2
x60  |-->  -p77*p86*p78*p61*(p50 + p51)*(p68 + p83)*(p57 + p59)*(p46*p104*p
99*p45*p48 + p43*p45*p48 + p44*p98*p104*p76*p48 + p46*p104*p99*p
76*p48 + p44*p98*p104*p76*p47 + p43*p76*p48 + p43*p45*p47 + p43*
p76*p47)/c1/k42/p46/p48/p49/p51/p57/p58/p60/p67/p93/p99/p100/p10
2/p103/p104^2/(p45 + p76)*b1/b2

```

c1 |--> p104

and

```

v[ 1] = p1*((-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14
*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*p
93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13*p
15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93 + p
72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p18*p20*
p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p
12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p22*p82*p93
- p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)*(p7 + p8)*p71*p88*p
4*(p2 + p3)/p87/p1/(p5 + p71)/p3/p6/p11/p13/p14/p16/p17/p89^2/p91/p
92/(p21 + p22)/p8/(p10 + p72)*q1 + (p68 + p83)*(p12 + p13)*p64*p62*
p90*p9*p72*(p7 + p8)*p71*p88*p4*(p2 + p3)/p89/p87/p1/(p5 + p71)/p3/
p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*b1/b2)*p87

v[ 2] = p2*(p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*
p22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*
p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p
21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p1
9*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9
*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p
82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p1
5*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21
)/(p5 + p71)/p3/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8
/(p10 + p72)*q1 + p4*p88*p71*(p7 + p8)*p72*p9*p90*p62*p64*(p68 + p8
3)*(p12 + p13)/p89/(p5 + p71)/p3/p6/p11/p13/p67/p93/(p63 + p64)/p8/
(p10 + p72)*b1/b2)

v[ 3] = p3*(p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*
p22 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*
p16*p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p
21 + p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p1
9*p20*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9
*p90*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p
82*p93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p1
5*p19*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21
)/(p5 + p71)/p3/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8
/(p10 + p72)*q1 + p4*p88*p71*(p7 + p8)*p72*p9*p90*p62*p64*(p68 + p8
3)*(p12 + p13)/p89/(p5 + p71)/p3/p6/p11/p13/p67/p93/(p63 + p64)/p8/
(p10 + p72)*b1/b2)

v[ 4] = p4*((p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p
11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20
*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9
*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p
82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p1
6*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p7
2*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p
22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)/p6/p11/p1
3/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 + (p7 + p
8)*p72*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p89/p6/p11/p13/p67/p9
3/(p63 + p64)/p8/(p10 + p72)*b1/b2)*p88

v[ 5] = p5*((-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14
*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*p
93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13*p
15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93 + p
72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p18*p20*
p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p
12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p22*p82*p93
- p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)*(p7 + p8)*p4*p88/(p
5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 +
p72)*q1 + (p68 + p83)*(p12 + p13)*p64*p62*p90*p9*p72*(p7 + p8)*p4*
p88/p89/(p5 + p71)/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*b1
/b2)

```

```

v[ 6] = p6*((p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p
11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20
*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9
*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p
82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p1
6*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p7
2*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p
22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)/p6/p11/p1
3/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 + (p7 + p
8)*p72*p9*p90*p62*p64*(p68 + p83)*(p12 + p13)/p89/p6/p11/p13/p67/p9
3/(p63 + p64)/p8/(p10 + p72)*b1/b2)*p89

v[ 7] = p7*((-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14
*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*p
93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13*p
15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93 + p
72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p18*p20*
p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p
12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p22*p82*p93
- p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)/p11/p13/p14/p16/p17
/p89/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 + p72*p9*p90*p62*p64*(p6
8 + p83)*(p12 + p13)/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*b1/
b2)

v[ 8] = p8*((-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14
*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*p
93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13*p
15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93 + p
72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p18*p20*
p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p
12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p22*p82*p93
- p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)/p11/p13/p14/p16/p17
/p89/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 + p72*p9*p90*p62*p64*(p6
8 + p83)*(p12 + p13)/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*b1/
b2)

v[ 9] = p9*((p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p21 + p22)
/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p12 + p13)*(p68 + p83)*p62*p
64/(p63 + p64)/p93/p67/p13/p11*b1/b2)*p90

v[ 10] = p10*((p18 + p19)*(p15 + p16)*p93*p82*p22*p20*(p12 + p13)*p9*p90/(p1
0 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p68 + p8
3)*p64*p62*(p12 + p13)*p9*p90/(p10 + p72)/(p63 + p64)/p93/p67/p13/p
11*b1/b2)

v[ 11] = p11*((p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p21 + p22)
)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p12 + p13)*(p68 + p83)*p62*
p64/(p63 + p64)/p93/p67/p13/p11*b1/b2)*p91

v[ 12] = p12*(p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p13/p14/p16/p17/p89/p9
2/(p21 + p22)*q1 + (p68 + p83)*p62*p64*p91/p13/p67/p93/(p63 + p64)*
b1/b2)

v[ 13] = p13*(p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p13/p14/p16/p17/p89/p9
2/(p21 + p22)*q1 + (p68 + p83)*p62*p64*p91/p13/p67/p93/(p63 + p64)*
b1/b2)

v[ 14] = (p15 + p16)*p82*(p18 + p19)/p17/p89/p16*q1

v[ 15] = p15*p82*(p18 + p19)/p17/p89/p16*q1

v[ 16] = p82*(p18 + p19)/p17/p89*q1

v[ 17] = (p18 + p19)*q1

v[ 18] = p18*q1

```

```

v[ 19] = p19*q1

v[ 20] = p20*(p15 + p16)*p82*(p18 + p19)/p17/p89/p16/p14/p92*q1*p93

v[ 21] = p21*p20*p93*p82*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21 +
p22)*q1

v[ 22] = p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21 +
p22)*q1

v[ 23] = p23*(p15 + p16)*p82*(p18 + p19)/p17/p89/p16/p14/p92*q1*p94

v[ 24] = p24*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24 +
p25)*q1

v[ 25] = p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24 +
p25)*q1

v[ 26] = p26*((p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p21 + p22
)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p12 + p13)*(p68 + p83)*p62*
p64/(p63 + p64)/p93/p67/p13/p11*b1/b2)*p95

v[ 27] = p27*((p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p26*p95/(p
27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p68 + p
83)*(p12 + p13)*p64*p62*p26*p95/(p63 + p64)/(p27 + p28)/p93/p67/p13
/p11*b1/b2)

v[ 28] = p28*((p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p26*p95/(p
27 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p68 + p
83)*(p12 + p13)*p64*p62*p26*p95/(p63 + p64)/(p27 + p28)/p93/p67/p13
/p11*b1/b2)

v[ 29] = p29*((p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p95*p28*p2
6*(p30 + p73)/p96/p29/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/p
16/p14/p13/p11*q1 + (p68 + p83)*(p12 + p13)*p64*p62*p95*p28*p26*(p3
0 + p73)/p96/p29/(p63 + p64)/(p27 + p28)/p93/p73/p67/p13/p11*b1/b2)
*p96

v[ 30] = p30*(p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p9
3/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/p16/p14/p13/p11*q1 +
p26*p28*p95*p62*p64*(p68 + p83)*(p12 + p13)/(p63 + p64)/(p27 + p28)
/p93/p73/p67/p13/p11*b1/b2)

v[ 31] = p31*((p15 + p16)*(p18 + p19)*(p12 + p13)*p93*p82*p22*p20*p95*p28*p2
6*(p30 + p73)/p96/p29/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/p
16/p14/p13/p11*q1 + (p68 + p83)*(p12 + p13)*p64*p62*p95*p28*p26*(p3
0 + p73)/p96/p29/(p63 + p64)/(p27 + p28)/p93/p73/p67/p13/p11*b1/b2)
*p97

v[ 32] = p32*((p30 + p73)*(p18 + p19)*(p15 + p16)*(p12 + p13)*p93*p82*p22*p2
0*p97*p95*p31*p28*p26/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/p92/p
91/p89/p73/p29/p17/p16/p14/p13/p11*q1 + (p68 + p83)*(p30 + p73)*(p1
2 + p13)*p64*p62*p97*p95*p31*p28*p26/(p63 + p64)/(p32 + p33)/(p27 +
p28)/p96/p93/p73/p67/p29/p13/p11*b1/b2)

v[ 33] = p33*((p30 + p73)*(p18 + p19)*(p15 + p16)*(p12 + p13)*p93*p82*p22*p2
0*p97*p95*p31*p28*p26/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/p92/p
91/p89/p73/p29/p17/p16/p14/p13/p11*q1 + (p68 + p83)*(p30 + p73)*(p1
2 + p13)*p64*p62*p97*p95*p31*p28*p26/(p63 + p64)/(p32 + p33)/(p27 +
p28)/p96/p93/p73/p67/p29/p13/p11*b1/b2)

v[ 34] = p34*(p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p18 + p19)*(p15 + p16
)*(p30 + p73)*(p104*p98*p74*p36 + p35*p74 + p35*p37)*(p12 + p13)/p1
1/p13/p14/p16/p17/p29/p34/p36/p73/p74/p89/p91/p92/p96/p98/p104/(p32
+ p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p34*p35/p36/p74*p75/p98/p104
*(p37 + p74)*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (p6
8 + p83)*(4*p11*p33*p35*p46*p48*p50*p59*p61*p13*p64*p73*p74*p76*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p35*p46*p48*p50*p59*p61*p63*p1

```

151

152

153

154

155

```

8*p49*p51*p57*p58*p60*p62*p13*p64*p73*p95*p26*p97*p99*p100*p102*p10
3*p104*p28*p31 + p33*p35*p37*p45*p46*p48*p12*p49*p51*p57*p58*p60*p6
2*p64*p95*p26*p97*p99*p100*p102*p103*p104*p28*p30*p31 + p33*p35*p37
*p45*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p73*p95*p26*p97*p99*p1
00*p102*p103*p104*p28*p31 + p33*p36*p46*p48*p49*p51*p57*p58*p60*p62
*p13*p64*p74*p76*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p30*
p31 + p33*p36*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p74*p76*p
95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p31 + p33*p36*p46*p48*
p12*p49*p51*p57*p58*p60*p62*p64*p74*p76*p95*p26*p97*p98*p99*p100*p1
02*p103*p104^2*p28*p30*p31 + p33*p36*p46*p48*p12*p49*p51*p57*p58*p6
0*p62*p64*p73*p74*p76*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28
*p31 + p33*p36*p45*p46*p48*p49*p51*p57*p58*p60*p62*p13*p64*p74*p95*
p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p30*p31 + p33*p36*p45*p46
*p48*p49*p51*p57*p58*p60*p62*p13*p64*p73*p74*p95*p26*p97*p98*p99*p1
00*p102*p103*p104^2*p28*p31 + p33*p36*p45*p46*p48*p12*p49*p51*p57*
p58*p60*p62*p64*p74*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p3
0*p31 + p33*p36*p45*p46*p48*p12*p49*p51*p57*p58*p60*p62*p64*p73*p74
*p95*p26*p97*p98*p99*p100*p102*p103*p104^2*p28*p31)/p104^2/p60/p103
/p57/p58/p102/p51/p49/p100/p48/p46/p99/p67/p93/p13/p11/p29/p96/p73/
p74/(p63 + p64)/(p32 + p33)/(p27 + p28)/(p45 + p76)/p36/p98/p34*b1/
b2)

```

```

v[ 35] = p35*(p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p30 + p73)*(p18 + p19
)*(p15 + p16)*(p12 + p13)*(p37 + p74)/p11/p13/p14/p16/p17/p29/p36/p
73/p74/p89/p91/p92/p96/p98/p104/(p32 + p33)/(p27 + p28)/(p21 + p22)
*q1 - 2/p36/p74*p75/p98/p104*(p37 + p74)*RootOf(a1 + a2*_Z + a3*_Z^
2 + a4*_Z^3 + a5*_Z^4) + (p68 + p83)*(p33*p46*p48*p49*p51*p12*p57*p
58*p60*p62*p64*p73*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31
+ p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p13*p95*p97*p99*p26*p
100*p102*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p6
0*p62*p64*p73*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33
*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100*p
102*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60
*p62*p64*p73*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p11*p3
3*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
4*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*
p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p7
7*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59*p61*
p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51
*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p4
4*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p
11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*
p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p64*
p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p46*p4
8*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p
33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99
*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p8
6*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p
77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p63*
p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57
*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p4
8*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p
45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p9
6*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p
78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p13*
p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p5
1*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p
46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*

```

p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p
86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*
p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63
*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p6
1*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p
51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*
p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p2
8*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*
p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p6
3*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p
59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*
p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11
*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p2
9 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*
p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p64*p7
3*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p50*p59*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*
p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32
*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p
27*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*
p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p73*p1
3*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p
63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*
p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46
*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p1
1*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*
p99*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p59*
p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p45*p46
*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
2*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*
p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86
*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*p7
7*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p
73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51
*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p4
4*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p
11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*
p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96
*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p7
8*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p64*
p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p4
8*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p
33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p8
6*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p63*p73*
p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p59*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p5
0*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p
44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*

$$\begin{aligned}
& p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28 \\
& *p29 + 4*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p9 \\
& 6*p98*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p \\
& 78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73* \\
& p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61 \\
& *p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p5 \\
& 0*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p \\
& 47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11* \\
& p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 \\
& + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9 \\
& 8*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p \\
& 86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p64*p73*p13*p76* \\
& p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p64*p73 \\
& *p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48*p49*p51*p57*p58* \\
& p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 \\
& + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p76*p95*p97*p99* \\
& p26*p100*p102*p103*p104*p28*p31 + p33*p46*p48*p49*p51*p12*p57*p58*p \\
& 60*p62*p64*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 + 4* \\
& p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28 \\
& *p29 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p9 \\
& 6*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p \\
& 78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13* \\
& p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p63 \\
& *p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p5 \\
& 9*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p \\
& 47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11* \\
& p32*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 \\
& + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p9 \\
& 9*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p \\
& 86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p76* \\
& p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73 \\
& *p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59*p6 \\
& 1*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p \\
& 50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32* \\
& p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4* \\
& p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p2 \\
& 7*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p \\
& 96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77* \\
& p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p64*p73*p13 \\
& *p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p6 \\
& 4*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p \\
& 50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45* \\
& p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11 \\
& *p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p2 \\
& 9 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p \\
& 99*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78* \\
& p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76 \\
& *p77*p78*p86*p96*p98*p27*p29)*(p37 + p74)/p98/p36/(p63 + p64)/(p45 \\
& + p76)/(p32 + p33)/(p27 + p28)/p74/p73/p96/p29/p11/p13/p93/p67/p99/ \\
& p46/p48/p100/p49/p51/p102/p58/p57/p103/p60/p104^2*b1/b2)
\end{aligned}$$

$$\begin{aligned}
v[36] = & p36*p104*(p20*p22*p26*p28*p31*p33*p82*p93*p95*p97*(p30 + p73)*(p18 \\
& + p19)*(p15 + p16)*(p12 + p13)*(p37 + p74)/p11/p13/p14/p16/p17/p29/ \\
& p36/p73/p74/p89/p91/p92/p96/p98/p104/(p32 + p33)/(p27 + p28)/(p21 + \\
& p22)*q1 - 2/p36/p74*p75/p98/p104*(p37 + p74)*RootOf(a1 + a2*_Z + a \\
& 3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (p68 + p83)*(p33*p46*p48*p49*p51*p12* \\
& p57*p58*p60*p62*p64*p73*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28 \\
& *p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p13*p95*p97*p99* \\
& p26*p100*p102*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p57*p \\
& 58*p60*p62*p64*p73*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 \\
& + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p \\
& 100*p102*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p5 \\
& 8*p60*p62*p64*p73*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 4*p \\
& 11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28* \\
& p29 + 4*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96 \\
& *p98*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p7 \\
& 8*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p \\
& 76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*p59*p61*p64*
\end{aligned}$$

p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p59
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p4
8*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p
33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p73*
p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p5
1*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p
46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*
p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p9
6*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*
p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61
*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p5
1*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p
46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*
p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p9
9*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*
p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p6
1*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p
48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*
p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4
*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p2
8*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p
96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*
p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73
*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p6
1*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p
59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*
p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11
*p33*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p2
9 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
99*p28*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*
p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p7
3*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*
p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32
*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p
27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*
p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p64*p73*p1
3*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p59*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p50*
p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44
*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p1
1*p32*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*
p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78
*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p1
3*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*
p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48
*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
2*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*
p28*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86
*p96*p99*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p7
7*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p59*p61*

p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50
*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p4
5*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p
11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*
p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96
*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p7
8*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p
13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*
p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p48*p51*p57
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p4
8*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p
33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 4*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p27*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p8
6*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57*p61*p64*p73*
p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p57*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p5
0*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p
44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*
p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28
*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p9
6*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*
p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p59*p61*p63
*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p5
9*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p
47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*
p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9
8*p28*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*
p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64
*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p5
9*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p
48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*
p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
7*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*
p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p64*p73*p13
*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p6
4*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48*p49*p51*p57
*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p3
0*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p76*p95*p97
*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p46*p48*p49*p51*p12*p57*
p58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31
+ 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9
8*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*
p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p59*p6
1*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p
51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*
p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p32*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
7*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*
p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p6
3*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p
59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*
p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11
*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*
p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76
*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p64*p7


```

3*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p59*p
61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*
p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32
*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*
p96*p99*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73*p1
3*p76*p77*p78*p86*p96*p98*p27*p29)*(p37 + p74)/p98/p36/(p63 + p64)/
(p45 + p76)/(p32 + p33)/(p27 + p28)/p74/p73/p96/p29/p11/p13/p93/p67
/p99/p46/p48/p100/p49/p51/p102/p58/p57/p103/p60/p104^2*b1/b2)*p98

v[ 37] = p37*((p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p8
2*p33*p31*p28*p26*p22*p20/p11/p13/p14/p16/p17/p29/p73/p74/p89/p91/p
92/p96/(p32 + p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p74*p75*RootOf(a1
+ a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (p68 + p83)*(p33*p46*p48*
p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97*p99*p26*p100*p102*p
103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p13*
p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p
49*p51*p57*p58*p60*p62*p64*p73*p13*p95*p97*p99*p26*p100*p102*p103*p
104*p28*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p95*p
97*p99*p26*p100*p102*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p5
1*p12*p57*p58*p60*p62*p64*p73*p95*p97*p99*p26*p100*p102*p103*p104*p
28*p31 + 4*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*
p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p1
3*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*
p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44
*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p1
1*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p
29 + 4*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*
p98*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78
*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p7
6*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*
p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48
*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p3
2*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*
p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p7
7*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p
73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*
p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48
*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p4
5*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p
11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*
p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96
*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p7
8*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*
p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p4
8*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99
*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p8
6*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p
77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*
p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57
*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p4
8*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p
46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p33*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p9
6*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*

```

p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64
*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p5
9*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p
48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*
p33*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p9
8*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*
p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p50*p59*p6
1*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p
50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*
p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p2
7*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*
p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73
*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p6
1*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p47*p50*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*
p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p32*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p32*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*
p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p7
3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*
p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32
*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*
p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77
*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p7
3*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p
61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*
p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44
*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p1
1*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 4*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*
p98*p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78
*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57*
p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48
*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p3
3*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
4*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*
p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p7
7*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50
*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p4
4*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p
11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*
p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*
p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50
*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p4
6*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p
32*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*
p13*p76*p77

```

p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p59*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p5
0*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48
*p49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p103
*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13
*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p46*p48*p49*
p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p102*p103*p104
*p28*p30*p31 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p64*
p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p4
7*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p
32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p32*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*
p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p5
1*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p
46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*
p11*p32*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27
*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p9
6*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*
p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64
*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p5
9*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p
48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p
86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*
p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p6
1*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29)/(p63 + p64)/(p45 + p
76)/(p32 + p33)/(p27 + p28)/p74/p73/p96/p29/p11/p13/p93/p67/p99/p46
/p48/p100/p49/p51/p102/p58/p57/p103/p60/p104*b1/b2)

v[ 38] = k38*c1*((p41*p39 + p104*p40*p98*p75 + p75*p39)/c1/k38/p98/p40/p104*
RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)-2*p77*p86*p78*p61*
(p57 + p59)*(p50 + p51)*(p68 + p83)*(p46*p99*p76*p48 + p46*p99*p45*
p48 + p98*p44*p76*p48 + p98*p44*p76*p47)/p104/(p45 + p76)/p67/p60/p
103/p57/p58/p102/p51/p49/p100/p93/p48/p46/p99/k38/c1*b1/b2)

v[ 39] = p39*(p41 + p75)/p40/p104/p98*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3
+ a5*_Z^4)

v[ 40] = (p41 + p75)*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)

v[ 41] = p41*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)

v[ 42] = -p77*p86*p78*p61*(p50 + p51)*(p68 + p83)*(p57 + p59)*(p46*p104*p99*
p45*p48 + p43*p45*p48 + p44*p98*p104*p76*p48 + p46*p104*p99*p76*p48
+ p44*p98*p104*p76*p47 + p43*p76*p48 + p43*p45*p47 + p43*p76*p47)/
p46/p48/p49/p51/p57/p58/p60/p67/p93/p99/p100/p102/p103/p104^2/(p45
+ p76)*b1/b2

v[ 43] = -p43*p77*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)*(p47 + p48
)/p99/p46/p100/p49/p51/p102/p58/p57/p103/p60/p67/p93/p104^2/p48*b1/
b2

v[ 44] = -p44/p104*p98*p77*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)*
(p47 + p48)/p99/p46/p100/p49/p51/p102/p58/p57/p103/p60/p67/p93/p48*b
1/b2

v[ 45] = -p45*p44*p98*(p47 + p48)*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p7

```

```

      8*p61*p77/p48/p104/p93/p67/p60/p103/p57/p58/p102/p51/p49/p100/p46/p
      99/(p45 + p76)*b1/b2

v[ 46] = -1/p104*p77*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)*(p47 +
      p48)/p100/p49/p51/p102/p58/p57/p103/p60/p67/p93/p48*b1/b2

v[ 47] = -p47*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61*p77/p100/p49/p
      51/p102/p58/p57/p103/p60/p67/p93/p104/p48*b1/b2

v[ 48] = -p77*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61/p104/p93/p67/p
      60/p103/p57/p58/p102/p51/p49/p100*b1/b2

v[ 49] = -(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61/p93/p67/p60/p103/p
      57/p58/p102/p51*b1/b2

v[ 50] = -p50*p61*p78*p86*(p68 + p83)*(p57 + p59)/p67/p93/p60/p103/p57/p58/p
      102/p51*b1/b2

v[ 51] = -p61*p78*p86*(p68 + p83)*(p57 + p59)/p103/p60/p67/p93/p57/p58/p102*
      b1/b2

v[ 52] = -p52*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61/p93/p67/p60/p1
      03/p57/p58/p102/p51/p49/p100*b1/b2*p101

v[ 53] = -p53*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p93/(
      p53 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*b1/b2

v[ 54] = -p52*p86*p78*p61*p54*(p68 + p83)*(p57 + p59)*(p50 + p51)*p101/p93/(
      p53 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*b1/b2

v[ 55] = -p61*p78*(p68 + p83)*(p57 + p59)*(p56 + p86)/p67/p93/p60/p103/p57/p
      58/p102*b1/b2

v[ 56] = -p56*p78*(p57 + p59)*(p68 + p83)*p61/p103/p60/p67/p93/p57/p58/p102*
      b1/b2

v[ 57] = -p78*(p68 + p83)*p61/p103/p60/p67/p93*b1/b2

v[ 58] = -p78*(p57 + p59)*(p68 + p83)*p61/p103/p60/p67/p93/p57*b1/b2

v[ 59] = -p59*p78*(p68 + p83)*p61/p103/p60/p67/p93/p57*b1/b2

v[ 60] = -p61*(p68 + p83)/p67/p93*b1/b2

v[ 61] = -p61*(p68 + p83)/p67/p93*b1/b2

v[ 62] = -p62*p91*(p68 + p83)/p67/p93*b1/b2

v[ 63] = -p63*p62*p91*(p68 + p83)/p67/p93/(p63 + p64)*b1/b2

v[ 64] = -p64*p62*p91*(p68 + p83)/p67/p93/(p63 + p64)*b1/b2

v[ 65] = -(p79*p80 + p66*p70 + p66*p80 + p79*p70 + p69*p93*p80)*p54*p52*p101
      *p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p51)/p67/p60/p103/p57/p
      58/p102/p51/p49/p100/(p79*p80 + p79*p70 + p69*p93*p80)/(p53 + p54)/
      p93*b1/b2

v[ 66] = -p66*(p70 + p80)*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(
      p50 + p51)/p93/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p
      49/p51/p102/p58/p57/p103/p60/p67*b1/b2

v[ 67] = -(p68 + p83)*b1/b2

v[ 68] = -p68*b1/b2

v[ 69] = -p69*(p70 + p80)*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(
      p50 + p51)/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p49/p
      51/p102/p58/p57/p103/p60/p67*b1/b2

```

```

v[ 70] = -p70*p69*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p5
1)/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p49/p51/p102/
p58/p57/p103/p60/p67*b1/b2

v[ 71] = p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22
- p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*
p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 +
p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p2
0*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90
*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p
93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)/(p
5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 +
p72)*q1 + (p68 + p83)*(p12 + p13)*(p7 + p8)*p4*p88*p71*p72*p9*p90*
p62*p64/p89/(p5 + p71)/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72
)*b1/b2 + p87*q4

v[ 72] = p87*q4

v[ 73] = p4*p88*p71*(p7 + p8)*(-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22
- p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*
p18*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 +
p72*p9*p90*p13*p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p2
0*p22*p82*p93 + p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90
*p13*p16*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p
93 + p72*p9*p90*p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p1
9*p20*p22*p82*p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)/(p
5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 +
p72)*q1 + (p68 + p83)*(p12 + p13)*(p7 + p8)*p4*p88*p71*p72*p9*p90*
p62*p64/p89/(p5 + p71)/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72
)*b1/b2 + p88*q5

v[ 74] = p88*q5

v[ 75] = p71*((-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p1
4*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*
p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13*
p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93 +
p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p18*p20
*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*p9*p90*
p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p22*p82*p9
3 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)*(p7 + p8)*p4*p88/(
p5 + p71)/p6/p11/p13/p14/p16/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 +
p72)*q1 + (p68 + p83)*(p12 + p13)*p64*p62*p90*p9*p72*(p7 + p8)*p4
*p88/p89/(p5 + p71)/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*b
1/b2)

v[ 76] = (p15 + p16)*(p18 + p19)*(p12 + p13)*p72*p9*p90*p20*p22*p82*p93/(p10
+ p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p12 + p13
)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p67/p93/(p63 +
p64)*b1/b2 + p89*q6

v[ 77] = p89*q6

v[ 78] = (p15 + p16)*(p18 + p19)*(p12 + p13)*p72*p9*p90*p20*p22*p82*p93/(p10
+ p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p12 + p13
)*(p68 + p83)*p72*p9*p90*p62*p64/(p10 + p72)/p11/p13/p67/p93/(p63 +
p64)*b1/b2 + p90*q7

v[ 79] = p90*q7

v[ 80] = p72*((p18 + p19)*(p15 + p16)*p93*p82*p22*p20*(p12 + p13)*p9*p90/(p1
0 + p72)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p68 + p8
3)*p64*p62*(p12 + p13)*p9*p90/(p10 + p72)/(p63 + p64)/p93/p67/p13/p
11*b1/b2)

v[ 81] = p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p2

```

```

7 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p12 + p1
3)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p28)/p93/p67/
p13/p11*b1/b2 + p95*q8

v[ 82] = p95*q8

v[ 83] = p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p93/(p2
7 + p28)/(p21 + p22)/p92/p89/p17/p16/p14/p13/p11/p91*q1 + (p12 + p1
3)*(p68 + p83)*p64*p62*p26*p28*p95/(p63 + p64)/(p27 + p28)/p93/p67/
p13/p11*b1/b2 + p96*q9

v[ 84] = p96*q9

v[ 85] = p73*(p26*p28*p95*(p12 + p13)*(p18 + p19)*(p15 + p16)*p20*p22*p82*p9
3/(p27 + p28)/(p21 + p22)/p92/p91/p89/p73/p17/p16/p14/p13/p11*q1 +
p26*p28*p95*p62*p64*(p68 + p83)*(p12 + p13)/(p63 + p64)/(p27 + p28)
/p93/p73/p67/p13/p11*b1/b2)

v[ 86] = (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*p33
*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/p92/p9
1/p89/p73/p29/p17/p16/p14/p13/p11*q1 + p97*(p68 + p83)*(p30 + p73)*
(p12 + p13)*p26*p28*p31*p33*p62*p64*p95/p11/p13/p67/p73/p93/(p63 +
p64)/(p32 + p33)/(p27 + p28)/p29/p96*b1/b2 + p97*q10

v[ 87] = p97*q10

v[ 88] = (p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p82*p33
*p31*p28*p26*p22*p20/(p32 + p33)/(p27 + p28)/(p21 + p22)/p96/p92/p9
1/p89/p73/p29/p17/p16/p14/p13/p11*q1 - p75*RootOf(a1 + a2*_Z + a3*_
Z^2 + a4*_Z^3 + a5*_Z^4) + (p68 + p83)*(p33*p46*p48*p49*p51*p12*p57
*p58*p60*p62*p64*p73*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p3
1 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p13*p95*p97*p99*p26
*p100*p102*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p57*p58*
p60*p62*p64*p73*p13*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p
33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p95*p97*p99*p26*p100
*p102*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p
60*p62*p64*p73*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + 3*p11*
p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29
+ 3*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p9
8*p27*p29 + 3*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p57*p61*p64*p73*p13*p76*
p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p51*p59*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p51*p59*p6
1*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p
51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*
p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3
*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
8*p29 + 3*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p
96*p98*p27*p29 + 3*p11*p32*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*
p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p51*p59*p61*p63*p73*p13
*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p51*p57*p61*p6
4*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p51*p
57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p46*
p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11
*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*
p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p73*p13
*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p6
3*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p
57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*
p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33
*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*
p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77
*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p63*p73*p1
3*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p

```

63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*
p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*
p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p1
1*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p
29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*
p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*
p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*p73*p1
3*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p
63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*
p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*
p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p3
3*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 +
4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*
p28*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*
p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p13*p76*p7
7*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*
p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 3*p11*p32*p4
4*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p
11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*
p29 + 3*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*
p98*p28*p29 + 3*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p7
8*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p50*p59*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p50*p59*p61*p64*
p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p48*p50*p59*
p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p4
8*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p
32*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*
p27*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p8
6*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73*p13*p
77*p78*p86*p96*p99*p27*p29 + 3*p11*p33*p44*p47*p50*p57*p61*p63*p73*
p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p57*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p5
1*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p
46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*
p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p9
6*p99*p27*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p51*p57*p61*p63*p73*p13*
p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p50*p59*p61*p64*
p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p50*p5
9*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p45*p
46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*
p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p86*p96*p9
9*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77*p78*p
86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*p73*p13*
p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p63*
p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11*p33*p44*p48*p51*p57*p6
1*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p
51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*
p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*
p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p2
7*p29 + 3*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p98*p28*p29 + 3*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*
p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p50*p57*p61*p64*p73*p13*
p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p48*p50*p57*p61*p6
4*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p48*p50*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*
p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*
p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p2
9 + 3*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p
98*p27*p29 + 3*p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*
p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p51*p59*p61*p63*p73*p13*p76*
p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p50*p59*p61*p63*p7
3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p50*p59*p

```

61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*
p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32
*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
3*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p
28*p29 + 3*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*
p96*p98*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77
*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*p64*p7
3*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p
61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*
p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 3*p11*p33*p44
*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p1
1*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 3*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*
p98*p28*p29 + 3*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p77*p78
*p86*p96*p98*p27*p29 + 3*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p33*p44*p47*p50*p59*p61*p64*p
73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48*p49*p51*p57*p5
8*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p
31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13*p76*p95*p97*p9
9*p26*p100*p102*p103*p104*p28*p31 + p33*p46*p48*p49*p51*p12*p57*p58
*p60*p62*p64*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 +
3*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p
28*p29 + 3*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*
p96*p98*p27*p29 + 3*p11*p32*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77
*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p51*p59*p61*p64*p73*p1
3*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44*p47*p51*p59*p61*p
63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p47*p51*
p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 3*p11*p32*p44
*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 3*p1
1*p32*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*
p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78
*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p59*
p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48
*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p3
2*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 +
4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*
p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*p76*p7
7*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p59*p61*p64*p73*p
13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p59*p61*
p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48
*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p4
5*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p
11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*
p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*p77*p78*p86*p96
*p99*p27*p29 + 3*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 3*p11*p32*p44*p48*p51*p59*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29)/p48/p104/p93/p67/p60/p103/p57/p58/p
102/p51/p49/p100/p46/p99/p13/p11/p29/p96/p73/(p63 + p64)/(p32 + p33
)/(p27 + p28)/(p45 + p76)*b1/b2 + p98*q11

```

v[89] = p98*q11

v[90] = p74*((p12 + p13)*(p30 + p73)*(p15 + p16)*(p18 + p19)*p97*p95*p93*p8
2*p33*p31*p28*p26*p22*p20/p11/p13/p14/p16/p17/p29/p73/p74/p89/p91/p
92/p96/(p32 + p33)/(p27 + p28)/(p21 + p22)*q1 - 2/p74*p75*RootOf(a1
+ a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (p68 + p83)*(p33*p46*p48*
p49*p51*p12*p57*p58*p60*p62*p64*p73*p76*p95*p97*p99*p26*p100*p102*p
103*p104*p28*p31 + p33*p45*p46*p48*p49*p51*p57*p58*p60*p62*p64*p13*
p95*p97*p99*p26*p100*p102*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p
49*p51*p57*p58*p60*p62*p64*p73*p13*p95*p97*p99*p26*p100*p102*p103*p
104*p28*p31 + p33*p45*p46*p48*p49*p51*p12*p57*p58*p60*p62*p64*p95*p
97*p99*p26*p100*p102*p103*p104*p28*p30*p31 + p33*p45*p46*p48*p49*p5
1*p12*p57*p58*p60*p62*p64*p73*p95*p97*p99*p26*p100*p102*p103*p104*p
28*p31 + 4*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*

p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p59*p61*p63*p73*p13*p76*p77
*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p64*p73*p1
3*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p50*p57*p61*p
64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p51*
p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44
*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p1
1*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p
29 + 4*p11*p33*p44*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*
p98*p27*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78
*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p51*p57*p61*p64*p73*p13*p7
6*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*
p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48
*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p3
2*p44*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p33*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*
p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86
*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p59*p61*p63*p73*p13*p7
7*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p51*p57*p61*p64*p
73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p51*p57*
p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48
*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p4
5*p46*p48*p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p
11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*
p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p64*p73*p13*p77*p78*p86*p96
*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p7
8*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*p73*p13*p
76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p57*p61*p64*
p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p57
*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p4
8*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p
33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p33*p45*p46*p48*p51*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99
*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p8
6*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p64*p73*p13*p
77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p48*p50*p57*p61*p63*
p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p45*p46*p48*p50*p57
*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p45*p46*p4
8*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p
46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*
p11*p33*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28
*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p9
6*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p51*p57*p61*p63*p73*p13*
p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p50*p59*p61*p64
*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p48*p50*p5
9*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p
48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*
p33*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p9
8*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p64*p73*p13*p76*p77*p78*p
86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73*p13*p76*
p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p57*p61*p63*p73
*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p48*p50*p59*p6
1*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p
50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*
p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4
*p11*p32*p44*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p2
7*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p
96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p63*p73*p13*p76*p77*
p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p64*p73
*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p6
1*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44*p47*p50*p
57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*
p47*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11
*p32*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p2
9 + 4*p11*p32*p46*p48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p
99*p27*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76*p77*p78*

p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p59*p61*p63*p73*p13*p76
*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p63*p7
3*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p
61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*
p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32
*p44*p47*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 +
4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p
28*p29 + 4*p11*p32*p45*p46*p48*p51*p59*p61*p63*p73*p13*p77*p78*p86*
p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p73*p13*p77
*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p61*p64*p7
3*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p46*p48*p51*p57*p
61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*
p51*p57*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p44
*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p1
1*p33*p44*p48*p51*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p
29 + 4*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*
p98*p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78
*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p73*p13*p7
6*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48*p50*p59*p61*p63*p
73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p48*p50*p57*
p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p48
*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p3
3*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 +
4*p11*p33*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*
p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86
*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p64*p73*p13*p76*p7
7*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p59*p61*p63*p73*p
13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p59*p61*
p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p50
*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p4
4*p47*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p
11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*
p29 + 4*p11*p32*p44*p47*p50*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96
*p98*p27*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p50*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p59*p61*
p64*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50
*p59*p61*p64*p73*p13*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p45*p4
6*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p
32*p45*p46*p48*p50*p59*p61*p63*p73*p13*p77*p78*p86*p96*p99*p27*p29
+ 4*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*p13*p76*p
77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p51*p57*p61*p63*p73*
p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p33*p44*p47*p50*p59*p61
*p64*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p33*p44*p47*p5
0*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + p33*p46*p48
*p49*p51*p57*p58*p60*p62*p64*p13*p76*p95*p97*p99*p26*p100*p102*p103
*p104*p28*p30*p31 + p33*p46*p48*p49*p51*p57*p58*p60*p62*p64*p73*p13
*p76*p95*p97*p99*p26*p100*p102*p103*p104*p28*p31 + p33*p46*p48*p49*
p51*p12*p57*p58*p60*p62*p64*p76*p95*p97*p99*p26*p100*p102*p103*p104
*p28*p30*p31 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p76*p77*p7
8*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p50*p57*p61*p63*p73*p13*p
76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p47*p51*p59*p61*p64*
p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p47*p51*p59
*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29 + 4*p11*p32*p44*p4
7*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p
32*p44*p47*p51*p59*p61*p63*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29
+ 4*p11*p32*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p86*p96*p98
*p28*p29 + 4*p11*p32*p44*p47*p51*p57*p61*p64*p73*p13*p76*p77*p78*p8
6*p96*p98*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*p13*p76*p
77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p51*p57*p61*p64*p73*
p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p51*p57*p61
*p63*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p5
1*p57*p61*p63*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p
46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*
p11*p32*p46*p48*p50*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27
*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p78*p86*p9

```

6*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p59*p61*p63*p73*p13*p76*p77*p
78*p86*p96*p99*p27*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64*p73*p13*
p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p32*p46*p48*p50*p57*p61*p64
*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*p33*p46*p48*p51*p5
9*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p28*p29 + 4*p11*p33*p46*p
48*p51*p59*p61*p64*p73*p13*p76*p77*p78*p86*p96*p99*p27*p29 + 4*p11*
p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p99*p28*p29
+ 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p86*p96*p9
9*p27*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p64*p73*p13*p77*p78*p
86*p96*p99*p28*p29 + 4*p11*p32*p45*p46*p48*p50*p57*p61*p63*p73*p13*
p77*p78*p86*p96*p99*p27*p29 + 4*p11*p32*p44*p48*p51*p59*p61*p64*p73
*p13*p76*p77*p78*p86*p96*p98*p28*p29 + 4*p11*p32*p44*p48*p51*p59*p6
1*p64*p73*p13*p76*p77*p78*p86*p96*p98*p27*p29)/(p63 + p64)/(p45 + p
76)/(p32 + p33)/(p27 + p28)/p74/p73/p96/p29/p11/p13/p93/p67/p99/p46
/p48/p100/p49/p51/p102/p58/p57/p103/p60/p104*b1/b2)

v[ 91] = p75*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)

v[ 92] = -p76*p44*p98*(p47 + p48)*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p7
8*p61*p77/p48/p104/p93/p67/p60/p103/p57/p58/p102/p51/p49/p100/p46/p
99/(p45 + p76)*b1/b2

v[ 93] = -p77*(p68 + p83)*(p57 + p59)*(p50 + p51)*p86*p78*p61/p104/p93/p67/p
60/p103/p57/p58/p102/p51/p49/p100*b1/b2

v[ 94] = -p78*(p68 + p83)*p61/p103/p60/p67/p93*b1/b2

v[ 95] = -(p69*p54*p52*p101*p61*p78*p86*p80*p50*p83*p59 + p69*p54*p52*p101*p
61*p78*p86*p80*p50*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80*p50*p
57*p83 + p69*p54*p52*p101*p61*p78*p86*p80*p50*p68*p59 + p69*p54*p52
*p101*p61*p78*p86*p80*p51*p83*p59 + p69*p54*p52*p101*p61*p78*p86*p8
0*p51*p57*p68 + p69*p54*p52*p101*p61*p78*p86*p80*p51*p57*p83 + p69*
p54*p52*p101*p61*p78*p86*p80*p51*p68*p59 + p83*p67*p60*p103*p57*p58
*p102*p51*p49*p100*p54*p79*p80 + p83*p67*p60*p103*p57*p58*p102*p51*
p49*p100*p53*p79*p80 + p83*p67*p60*p103*p57*p58*p102*p51*p49*p100*p
53*p79*p70 + p83*p67*p60*p103*p57*p58*p102*p51*p49*p100*p53*p69*p93
*p80 + p83*p67*p60*p103*p57*p58*p102*p51*p49*p100*p54*p79*p70 + p83
*p67*p60*p103*p57*p58*p102*p51*p49*p100*p54*p69*p93*p80)/(p53 + p54
)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p49/p51/p102/p58/p57/p103/
p60/p67*b1/b2 + p93*q12

v[ 96] = p93*q12

v[ 97] = -p52*p86*p78*p61*p54*(p68 + p83)*(p57 + p59)*(p50 + p51)*p101/p93/(
p53 + p54)/p67/p60/p103/p57/p58/p102/p51/p49/p100*b1/b2 + p101*q13

v[ 98] = p101*q13

v[ 99] = -p79*(p70 + p80)*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(
p50 + p51)/p93/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p
49/p51/p102/p58/p57/p103/p60/p67*b1/b2

v[100] = -p80*p69*p54*p52*p101*p61*p78*p86*(p68 + p83)*(p57 + p59)*(p50 + p5
1)/(p53 + p54)/(p79*p80 + p79*p70 + p69*p93*p80)/p100/p49/p51/p102/
p58/p57/p103/p60/p67*b1/b2

v[101] = p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21 +
p22)*q1 + p91*q14

v[102] = p91*q14

v[103] = p20*p22*p82*p93*(p18 + p19)*(p15 + p16)/p14/p16/p17/p89/p92/(p21 +
p22)*q1

v[104] = p82*(p18 + p19)/p17/p89*q1 + p92*q15

v[105] = p92*q15

```

```

v[106] = p82*(p18 + p19)/p17/p89*q1
v[107] = -p83*b1/b2
v[108] = p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24 +
p25)*q1 + p94*q16
v[109] = p94*q16
v[110] = p25*p23*p94*p82*(p18 + p19)*(p15 + p16)/p17/p89/p16/p14/p92/(p24 +
p25)*q1
v[111] = (-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p14*p16
*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*p93 -
p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13*p15*p
19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93 + p72*p
9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p18*p20*p22*
p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p12*p
16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p22*p82*p93 - p
19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)*(p7 + p8)*p71*p88*p4*(p
85*p2 + p85*p3 + p1*p87*p3)/p87/p1/(p5 + p71)/p3/p6/p11/p13/p14/p16
/p17/p89^2/p91/p92/(p21 + p22)/p8/(p10 + p72)*q1 + (p12 + p13)*(p68
+ p83)*p64*p62*p90*p9*p72*(p7 + p8)*p71*p88*p4*(p85*p2 + p85*p3 +
p1*p87*p3)/p89/p87/p1/(p5 + p71)/p3/p6/p11/p13/p67/p93/(p63 + p64)/
p8/(p10 + p72)*b1/b2
v[112] = p85*((-p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p22 - p19*p11*p13*p1
4*p16*p17*p89*p91*p92*p10*p22 + p72*p9*p90*p12*p16*p18*p20*p22*p82*
p93 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p10*p21 + p72*p9*p90*p13*
p15*p19*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p19*p20*p22*p82*p93 +
p72*p9*p90*p13*p15*p18*p20*p22*p82*p93 + p72*p9*p90*p13*p16*p18*p20
*p22*p82*p93 + p72*p9*p90*p12*p15*p18*p20*p22*p82*p93 + p72*p9*p90*
p12*p16*p19*p20*p22*p82*p93 + p72*p9*p90*p12*p15*p19*p20*p22*p82*p9
3 - p19*p11*p13*p14*p16*p17*p89*p91*p92*p72*p21)*(p7 + p8)*p71*p88*
p4*(p2 + p3)/p87/p1/(p5 + p71)/p3/p6/p11/p13/p14/p16/p17/p89^2/p91/
p92/(p21 + p22)/p8/(p10 + p72)*q1 + (p68 + p83)*(p12 + p13)*p64*p62
*p90*p9*p72*(p7 + p8)*p71*p88*p4*(p2 + p3)/p89/p87/p1/(p5 + p71)/p3
/p6/p11/p13/p67/p93/(p63 + p64)/p8/(p10 + p72)*b1/b2)
v[113] = -p61*p78*p86*(p68 + p83)*(p57 + p59)/p103/p60/p67/p93/p57/p58/p102*
b1/b2 + p100*q17
v[114] = p100*q17
v[115] = -p61*p78*p86*(p68 + p83)*(p57 + p59)/p103/p60/p67/p93/p57/p58/p102*
b1/b2

```

The mapping function ψ_q^{-1} is given by

```

q1  |--> y12
q4  |--> y45
q5  |--> y47
q6  |--> y49
q7  |--> y51
q8  |--> y53
q9  |--> y55
q10 |--> y57
q11 |--> y59
q12 |--> y61
q13 |--> y63
q14 |--> y65
q15 |--> y67
q16 |--> y69
q17 |--> y72

```

The composite inverse map ψ_{qp}^{-1} :

| | | |
|-----|-----|-----|
| p1 | --> | k1 |
| p2 | --> | k2 |
| p3 | --> | k3 |
| p4 | --> | k4 |
| p5 | --> | k5 |
| p6 | --> | k6 |
| p7 | --> | k7 |
| p8 | --> | k8 |
| p9 | --> | k9 |
| p10 | --> | k10 |
| p11 | --> | k11 |
| p12 | --> | k12 |
| p13 | --> | k13 |
| p14 | --> | k14 |
| p15 | --> | k15 |
| p16 | --> | k16 |
| p17 | --> | k17 |
| p18 | --> | k18 |
| p19 | --> | k19 |
| p20 | --> | k20 |
| p21 | --> | k21 |
| p22 | --> | k22 |
| p23 | --> | k23 |
| p24 | --> | k24 |
| p25 | --> | k25 |
| p26 | --> | k26 |
| p27 | --> | k27 |
| p28 | --> | k28 |
| p29 | --> | k29 |
| p30 | --> | k30 |
| p31 | --> | k31 |
| p32 | --> | k32 |
| p33 | --> | k33 |
| p34 | --> | k34 |
| p35 | --> | k35 |
| p36 | --> | k36 |
| p37 | --> | k37 |
| p38 | --> | k38 |
| p39 | --> | k39 |
| p40 | --> | k40 |
| p41 | --> | k41 |
| p42 | --> | k42 |
| p43 | --> | k43 |
| p44 | --> | k44 |
| p45 | --> | k45 |
| p46 | --> | k46 |
| p47 | --> | k47 |
| p48 | --> | k48 |
| p49 | --> | k49 |
| p50 | --> | k50 |
| p51 | --> | k51 |
| p52 | --> | k52 |
| p53 | --> | k53 |
| p54 | --> | k54 |
| p55 | --> | k55 |
| p56 | --> | k56 |
| p57 | --> | k57 |
| p58 | --> | k58 |
| p59 | --> | k59 |
| p60 | --> | k60 |
| p61 | --> | k61 |
| p62 | --> | k62 |
| p63 | --> | k63 |
| p64 | --> | k64 |
| p65 | --> | k65 |
| p66 | --> | k66 |
| p67 | --> | k67 |
| p68 | --> | k68 |

```

p69 |--> k69
p70 |--> k70
p71 |--> k75
p72 |--> k80
p73 |--> k85
p74 |--> k90
p75 |--> k91
p76 |--> k92
p77 |--> k93
p78 |--> k94
p79 |--> k99
p80 |--> k100
p81 |--> k103
p82 |--> k106
p83 |--> k107
p84 |--> k110
p85 |--> k112
p86 |--> k115
p87 |--> x2
p88 |--> x5
p89 |--> x7
p90 |--> x10
p91 |--> x12
p92 |--> x15
p93 |--> x19
p94 |--> x21
p95 |--> x24
p96 |--> x27
p97 |--> x29
p98 |--> x33
p99 |--> x39
p100 |--> x42
p101 |--> x45
p102 |--> x49
p103 |--> x52
p104 |--> c1
q1 |--> x18
q4 |--> k72
q5 |--> k74
q6 |--> k77
q7 |--> k79
q8 |--> k82
q9 |--> k84
q10 |--> k87
q11 |--> k89
q12 |--> k96
q13 |--> k98
q14 |--> k102
q15 |--> k105
q16 |--> k109
q17 |--> k114

```

The complete steady state map ψ_{ss} is therefore

```

k1 |--> k1
k2 |--> k2
k3 |--> k3
k4 |--> k4
k5 |--> k5
k6 |--> k6
k7 |--> k7

```

k8 |--> k8
k9 |--> k9
k10 |--> k10
k11 |--> k11
k12 |--> k12
k13 |--> k13
k14 |--> k14
k15 |--> k15
k16 |--> k16
k17 |--> k17
k18 |--> k18
k19 |--> k19
k20 |--> k20
k21 |--> k21
k22 |--> k22
k23 |--> k23
k24 |--> k24
k25 |--> k25
k26 |--> k26
k27 |--> k27
k28 |--> k28
k29 |--> k29
k30 |--> k30
k31 |--> k31
k32 |--> k32
k33 |--> k33
k34 |--> k34
k35 |--> k35
k36 |--> k36
k37 |--> k37
k38 |--> k38
k39 |--> k39
k40 |--> k40
k41 |--> k41

```

k42    |-->  k42
k43    |-->  k43
k44    |-->  k44
k45    |-->  k45
k46    |-->  k46
k47    |-->  k47
k48    |-->  k48
k49    |-->  k49
k50    |-->  k50
k51    |-->  k51
k52    |-->  k52
k53    |-->  k53
k54    |-->  k54
k55    |-->  k55
k56    |-->  k56
k57    |-->  k57
k58    |-->  k58
k59    |-->  k59
k60    |-->  k60
k61    |-->  k61
k62    |-->  k62
k63    |-->  k63
k64    |-->  k64
k65    |-->  k65
k66    |-->  k66
k67    |-->  k67
k68    |-->  k68
k69    |-->  k69
k70    |-->  k70
k71    |-->  k4*x5*k75*(k7 + k8)*(-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22
- k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k
16*k18*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10
*k21 + k80*k9*x10*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*
k16*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x
19 + k80*k9*x10*k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k1
5*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19
+ k80*k9*x10*k12*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16
*k17*x7*x12*x15*k80*k21)/(k5 + k75)/k6/k11/k13/k14/k16/k17/x7^2/
x12/x15/(k21 + k22)/k8/(k10 + k80)*x18 + (k68 + k107)*(k12 + k13

```



```

)*(k7 + k8)*k4*x5*k75*k80*k9*x10*k62*k64/x7/(k5 + k75)/k6/k11/k1
3/k67/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2 + k72*x2

k72    |--> k72

k73    |--> k4*x5*k75*(k7 + k8)*(-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22
- k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k
16*k18*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10
*k21 + k80*k9*x10*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*
k16*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x
19 + k80*k9*x10*k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k1
5*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19
+ k80*k9*x10*k12*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16
*k17*x7*x12*x15*k80*k21)/(k5 + k75)/k6/k11/k13/k14/k16/k17/x7^2/
x12/x15/(k21 + k22)/k8/(k10 + k80)*x18 + (k68 + k107)*(k12 + k13
)*(k7 + k8)*k4*x5*k75*k80*k9*x10*k62*k64/x7/(k5 + k75)/k6/k11/k1
3/k67/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2 + k74*x5

k74    |--> k74

k75    |--> k75

k76    |--> (k15 + k16)*(k18 + k19)*(k12 + k13)*k80*k9*x10*k20*k22*k106*x19/
(k10 + k80)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k1
2 + k13)*(k68 + k107)*k80*k9*x10*k62*k64/(k10 + k80)/k11/k13/k67
/x19/(k63 + k64)*b1/b2 + k77*x7

k77    |--> k77

k78    |--> (k15 + k16)*(k18 + k19)*(k12 + k13)*k80*k9*x10*k20*k22*k106*x19/
(k10 + k80)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k1
2 + k13)*(k68 + k107)*k80*k9*x10*k62*k64/(k10 + k80)/k11/k13/k67
/x19/(k63 + k64)*b1/b2 + k79*x10

k79    |--> k79

k80    |--> k80

k81    |--> k26*k28*x24*(k12 + k13)*(k18 + k19)*(k15 + k16)*k20*k22*k106*x19
/(k27 + k28)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k
12 + k13)*(k68 + k107)*k64*k62*k26*k28*x24/(k63 + k64)/(k27 + k2
8)/x19/k67/k13/k11*b1/b2 + k82*x24

k82    |--> k82

k83    |--> k26*k28*x24*(k12 + k13)*(k18 + k19)*(k15 + k16)*k20*k22*k106*x19
/(k27 + k28)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k
12 + k13)*(k68 + k107)*k64*k62*k26*k28*x24/(k63 + k64)/(k27 + k2
8)/x19/k67/k13/k11*b1/b2 + k84*x27

k84    |--> k84

k85    |--> k85

k86    |--> (k12 + k13)*(k30 + k85)*(k15 + k16)*(k18 + k19)*x29*x24*x19*k106
*k33*k31*k28*k26*k22*k20/(k32 + k33)/(k27 + k28)/(k21 + k22)/x27
/x15/x12/x7/k85/k29/k17/k16/k14/k13/k11*x18 + x29*(k68 + k107)*(
k30 + k85)*(k12 + k13)*k26*k28*k31*k33*k62*k64*x24/k11/k13/k67/k
85/x19/(k63 + k64)/(k32 + k33)/(k27 + k28)/k29/x27*b1/b2 + k87*x
29

k87    |--> k87

k88    |--> (k12 + k13)*(k30 + k85)*(k15 + k16)*(k18 + k19)*x29*x24*x19*k106
*k33*k31*k28*k26*k22*k20/(k32 + k33)/(k27 + k28)/(k21 + k22)/x27
/x15/x12/x7/k85/k29/k17/k16/k14/k13/k11*x18 - k91*RootOf(a1 + a2
*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (k68 + k107)*(3*k11*k33*k44
*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 +

```

3*k11*k33*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x
33*k27*k29 + k33*k46*k48*k49*k51*k57*k58*k60*k62*k64*k13*k92*x24
*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k46*k48*k49*k51*k5
7*k58*k60*k62*k64*k85*k13*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28
*k31 + k33*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*k92*x24*x29*x
39*k26*x42*x49*x52*c1*k28*k30*k31 + 3*k11*k32*k44*k48*k50*k57*k6
1*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k32*k44*k
48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 3*
k11*k32*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33
*k28*k29 + 3*k11*k32*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94
*k115*x27*x33*k27*k29 + 3*k11*k32*k44*k47*k51*k59*k61*k63*k85*k1
3*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k32*k44*k47*k51*k59*k
61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 3*k11*k32*k44*k
47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*
k11*k32*k44*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x3
3*k27*k29 + 4*k11*k32*k46*k48*k51*k57*k61*k64*k85*k13*k92*k93*k9
4*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k57*k61*k64*k85*k
13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k51*k57*
k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46
*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 +
4*k11*k32*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x
39*k28*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93*k
94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k63*k85*
k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k50*k59
*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k4
6*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 +
4*k11*k32*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*
x39*k27*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k64*k85*k13*k92*k93*
k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k64*k85
*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k5
0*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k
45*k46*k48*k50*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29
+ 4*k11*k32*k45*k46*k48*k50*k57*k61*k63*k85*k13*k93*k94*k115*x27
*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k50*k57*k61*k63*k85*k13*k93
*k94*k115*x27*x39*k27*k29 + 3*k11*k32*k44*k48*k51*k59*k61*k64*k8
5*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k32*k44*k48*k51*k
59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + k33*k45*k4
6*k48*k49*k51*k57*k58*k60*k62*k64*k85*k13*x24*x29*x39*k26*x42*x49*x
52*c1*k28*k30*k31 + k33*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*k
85*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28*k31 + k33*k45*k46*k48*
k49*k51*k57*k58*k60*k62*k64*k85*k13*x24*x29*x39*k26*x42*x49*x52*
c1*k28*k31 + k33*k45*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*x24
*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k45*k46*k48*k49*k5
1*k12*k57*k58*k60*k62*k64*k85*x24*x29*x39*k26*x42*x49*x52*c1*k28
*k31 + 3*k11*k33*k44*k47*k50*k59*k61*k63*k85*k13*k92*k93*k94*k11
5*x27*x33*k28*k29 + 3*k11*k33*k44*k47*k50*k59*k61*k63*k85*k13*k9
2*k93*k94*k115*x27*x33*k27*k29 + 3*k11*k33*k44*k47*k50*k57*k61*k
64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k33*k44*k47*
k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 3*k11
*k33*k44*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k2
8*k29 + 3*k11*k33*k44*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k1
15*x27*x33*k27*k29 + 3*k11*k33*k44*k48*k51*k59*k61*k63*k85*k13*k
92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k33*k44*k48*k51*k59*k61*
k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 3*k11*k33*k44*k48
*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k1
1*k33*k44*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k
27*k29 + 3*k11*k32*k44*k48*k51*k59*k61*k63*k85*k13*k92*k93*k94*k
115*x27*x33*k28*k29 + 3*k11*k32*k44*k48*k51*k59*k61*k63*k85*k13*
k92*k93*k94*k115*x27*x33*k27*k29 + 3*k11*k32*k44*k48*k51*k57*k61
*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k32*k44*k4
8*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k
11*k33*k46*k48*k51*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*
k28*k29 + 4*k11*k33*k45*k46*k48*k51*k59*k61*k63*k85*k13*k93*k94*
k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*k59*k61*k63*k85
*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k51*k5
7*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k
46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*
k11*k33*k45*k46*k48*k51*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39

*k28*k29 + 4*k11*k33*k45*k46*k48*k51*k57*k61*k63*k85*k13*k93*k94
*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k50*k59*k61*k64*k8
5*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k50*k
59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*
k46*k48*k50*k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4
*k11*k33*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x3
9*k28*k29 + 4*k11*k33*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k9
4*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k57*k61*k63*k85*k
13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k50*k57*
k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45
*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 +
4*k11*k33*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*k115*x27*x
39*k27*k29 + 4*k11*k33*k45*k46*k48*k50*k57*k61*k64*k85*k13*k93*k
94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k50*k57*k61*k64*k
85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k50
*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k4
5*k46*k48*k50*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 +
4*k11*k33*k45*k46*k48*k50*k59*k61*k63*k85*k13*k93*k94*k115*x27*
x39*k27*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k63*k85*k13*k92*k93*
k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k51*k57*k61*k64*k85
*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k51*k5
7*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k
46*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29
+ 4*k11*k33*k46*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27
*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93
*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k50*k59*k61*k64*k8
5*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k
59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*
k46*k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29
+ 3*k11*k32*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x2
7*x33*k28*k29 + 3*k11*k32*k44*k48*k50*k57*k61*k64*k85*k13*k92*k9
3*k94*k115*x27*x33*k27*k29 + 3*k11*k32*k44*k48*k51*k57*k61*k63*k
85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k32*k44*k48*k51*
k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 3*k11*k32
*k44*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k2
9 + 3*k11*k32*k44*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x
27*x33*k27*k29 + 3*k11*k32*k44*k48*k50*k59*k61*k63*k85*k13*k92*k
93*k94*k115*x27*x33*k28*k29 + 3*k11*k32*k44*k48*k50*k59*k61*k63*
k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k46*k48*k50
*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k3
2*k46*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k
29 + 4*k11*k32*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*k115*
x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k51*k59*k61*k64*k85*k13*
k93*k94*k115*x27*x39*k27*k29 + 3*k11*k33*k44*k47*k50*k57*k61*k63
*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k33*k44*k47*k5
0*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k
32*k46*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*
k29 + 4*k11*k32*k46*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115
*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k51*k59*k61*k63*k85*k13*k92
*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k59*k61*k6
3*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 3*k11*k32*k44*k47*k
51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*
k32*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27
*k29 + 3*k11*k32*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k11
5*x27*x33*k28*k29 + 3*k11*k32*k44*k47*k50*k59*k61*k64*k85*k13*k9
2*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k45*k46*k48*k51*k59*k
61*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*
k48*k51*k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11
*k32*k45*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k2
8*k29 + 4*k11*k32*k45*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k1
15*x27*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k51*k57*k61*k63*k85*k
13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k51*k57*
k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 3*k11*k33*k44*k48
*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k1
1*k33*k44*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k
27*k29 + 3*k11*k33*k44*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k
115*x27*x33*k28*k29 + 3*k11*k33*k44*k48*k50*k59*k61*k64*k85*k13*
k92*k93*k94*k115*x27*x33*k27*k29 + 3*k11*k33*k44*k48*k50*k59*k61

```

*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k33*k44*k4
8*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 3*k
11*k33*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*
k28*k29 + 3*k11*k33*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*
k115*x27*x33*k27*k29 + 3*k11*k33*k44*k48*k50*k57*k61*k63*k85*k13
*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k33*k44*k48*k50*k57*k6
1*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 3*k11*k33*k44*k
47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*
k11*k33*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33
*k27*k29 + 3*k11*k33*k44*k47*k51*k59*k61*k63*k85*k13*k92*k93*k94
*k115*x27*x33*k28*k29 + 3*k11*k33*k44*k47*k51*k59*k61*k63*k85*k1
3*k92*k93*k94*k115*x27*x33*k27*k29 + 3*k11*k32*k44*k47*k50*k59*k
61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k32*k44*
k47*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 3
*k11*k32*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x3
3*k28*k29 + 3*k11*k32*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k9
4*k115*x27*x33*k27*k29 + 3*k11*k32*k44*k47*k50*k57*k61*k63*k85*k
13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k32*k44*k47*k50*k57*
k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k45
*k46*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 +
4*k11*k32*k45*k46*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x
39*k27*k29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k63*k85*k13*k93*k
94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k63*
k85*k13*k93*k94*k115*x27*x39*k27*k29 + 3*k11*k33*k44*k47*k51*k57
*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k33*k4
4*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 +
3*k11*k33*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*
x33*k28*k29 + 3*k11*k33*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*
k94*k115*x27*x33*k27*k29)/(k48/c1/x19/k67/k60/x52/k57/k58/x49/k51
/k49/x42/k46/x39/k13/k11/k29/x27/k85/(k63 + k64)/(k32 + k33)/(k2
7 + k28)/(k45 + k92)*b1/b2 + k89*x33

```

k89 |--> k89

k90 |--> k90

k91 |--> k91

k92 |--> k92

k93 |--> k93

k94 |--> k94

k95 |--> $-(k69*k54*k52*x45*k61*k94*k115*k100*k50*k107*k59 + k69*k54*k52*x45*k61*k94*k115*k100*k50*k57*k68 + k69*k54*k52*x45*k61*k94*k115*k100*k50*k57*k107 + k69*k54*k52*x45*k61*k94*k115*k100*k50*k68*k59 + k69*k54*k52*x45*k61*k94*k115*k100*k51*k107*k59 + k69*k54*k52*x45*k61*k94*k115*k100*k51*k57*k68 + k69*k54*k52*x45*k61*k94*k115*k100*k51*k57*k107 + k69*k54*k52*x45*k61*k94*k115*k100*k51*k68*k59 + k107*k67*k60*x52*k57*k58*x49*k51*k49*x42*k54*k99*k100 + k107*k67*k60*x52*k57*k58*x49*k51*k49*x42*k53*k99*k100 + k107*k67*k60*x52*k57*k58*x49*k51*k49*x42*k53*k99*k70 + k107*k67*k60*x52*k57*k58*x49*k51*k49*x42*k53*k69*x19*k100 + k107*k67*k60*x52*k57*k58*x49*k51*k49*x42*k54*k99*k70 + k107*k67*k60*x52*k57*k58*x49*k51*k49*x42*k54*k69*x19*k100)/(k53 + k54)/(k99*k100 + k99*k70 + k69*x19*k100)/x42/k49/k51/x49/k58/k57/x52/k60/k67*b1/b2 + k96*x19$

k96 |--> k96

k97 |--> $-k52*k115*k94*k61*k54*(k68 + k107)*(k57 + k59)*(k50 + k51)*x45/x19/(k53 + k54)/k67/k60/x52/k57/k58/x49/k51/k49/x42*b1/b2 + k98*x45$

k98 |--> k98

k99 |--> k99

```

k100  |-->  k100

k101  |-->  k20*k22*k106*x19*(k18 + k19)*(k15 + k16)/k14/k16/k17/x7/x15/(k21
          + k22)*x18 + k102*x12

k102  |-->  k102

k103  |-->  k103

k104  |-->  k106*(k18 + k19)/k17/x7*x18 + k105*x15

k105  |-->  k105

k106  |-->  k106

k107  |-->  k107

k108  |-->  k25*k23*x21*k106*(k18 + k19)*(k15 + k16)/k17/x7/k16/k14/x15/(k24
          + k25)*x18 + k109*x21

k109  |-->  k109

k110  |-->  k110

k111  |-->  (-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19*k11*k13*k14*k
          16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18*k20*k22*k106*
          x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 + k80*k9*x10*k1
          3*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k16*k19*k20*k22*k106
          *x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k80*k9*x10*k13*
          k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*k20*k22*k106*x
          19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80*k9*x10*k12*k1
          5*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*
          k21)*(k7 + k8)*k75*x5*k4*(k112*k2 + k112*k3 + k1*x2*k3)/x2/k1/(k
          5 + k75)/k3/k6/k11/k13/k14/k16/k17/x7^2/x12/x15/(k21 + k22)/k8/(
          k10 + k80)*x18 + (k12 + k13)*(k68 + k107)*k64*k62*x10*k9*k80*(k7
          + k8)*k75*x5*k4*(k112*k2 + k112*k3 + k1*x2*k3)/x7/x2/k1/(k5 + k
          75)/k3/k6/k11/k13/k67/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2

k112  |-->  k112

k113  |-->  -k61*k94*k115*(k68 + k107)*(k57 + k59)/x52/k60/k67/x19/k57/k58/x
          49*b1/b2 + k114*x42

k114  |-->  k114

k115  |-->  k115

x1     |-->  (-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19*k11*k13*k14*k
          16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18*k20*k22*k106*
          x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 + k80*k9*x10*k1
          3*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k16*k19*k20*k22*k106
          *x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k80*k9*x10*k13*
          k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*k20*k22*k106*x
          19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80*k9*x10*k12*k1
          5*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*
          k21)*(k7 + k8)*k75*x5*k4*(k2 + k3)/x2/k1/(k5 + k75)/k3/k6/k11/k1
          3/k14/k16/k17/x7^2/x12/x15/(k21 + k22)/k8/(k10 + k80)*x18 + (k68
          + k107)*(k12 + k13)*k64*k62*x10*k9*k80*(k7 + k8)*k75*x5*k4*(k2
          + k3)/x7/x2/k1/(k5 + k75)/k3/k6/k11/k13/k67/x19/(k63 + k64)/k8/(
          k10 + k80)*b1/b2

x2     |-->  x2

x3     |-->  k4*x5*k75*(k7 + k8)*(-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22
          - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k
          16*k18*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10
          *k21 + k80*k9*x10*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*
          k16*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x

```

```

19 + k80*k9*x10*k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k1
5*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19
+ k80*k9*x10*k12*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16
*k17*x7*x12*x15*k80*k21)/(k5 + k75)/k3/k6/k11/k13/k14/k16/k17/x7
^2/x12/x15/(k21 + k22)/k8/(k10 + k80)*x18 + k4*x5*k75*(k7 + k8)*
k80*k9*x10*k62*k64*(k68 + k107)*(k12 + k13)/x7/(k5 + k75)/k3/k6/
k11/k13/k67/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2

x4    |--> (k7 + k8)*(-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19*k11
*k13*k14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18*k20
*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 + k80
*k9*x10*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k16*k19*k2
0*k22*k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k80*k
9*x10*k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*k20*
k22*k106*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80*k9*
x10*k12*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x1
2*x15*k80*k21)/k6/k11/k13/k14/k16/k17/x7^2/x12/x15/(k21 + k22)/k
8/(k10 + k80)*x18 + (k7 + k8)*k80*k9*x10*k62*k64*(k68 + k107)*(k
12 + k13)/x7/k6/k11/k13/k67/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2

x5    |--> x5

x6    |--> (-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19*k11*k13*k14*k
16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18*k20*k22*k106*
x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 + k80*k9*x10*k1
3*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k16*k19*k20*k22*k106
*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k80*k9*x10*k13*
k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*k20*k22*k106*x
19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80*k9*x10*k12*k1
5*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*
k21)*(k7 + k8)*k4*x5/(k5 + k75)/k6/k11/k13/k14/k16/k17/x7^2/x12/
x15/(k21 + k22)/k8/(k10 + k80)*x18 + (k68 + k107)*(k12 + k13)*k6
4*k62*x10*k9*k80*(k7 + k8)*k4*x5/x7/(k5 + k75)/k6/k11/k13/k67/x1
9/(k63 + k64)/k8/(k10 + k80)*b1/b2

x7    |--> x7

x8    |--> (-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19*k11*k13*k14*k
16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18*k20*k22*k106*
x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 + k80*k9*x10*k1
3*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k16*k19*k20*k22*k106
*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k80*k9*x10*k13*
k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*k20*k22*k106*x
19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80*k9*x10*k12*k1
5*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*
k21)/k11/k13/k14/k16/k17/x7/x12/x15/(k21 + k22)/k8/(k10 + k80)*x
18 + k80*k9*x10*k62*k64*(k68 + k107)*(k12 + k13)/k11/k13/k67/x19
/(k63 + k64)/k8/(k10 + k80)*b1/b2

x9    |--> (k12 + k13)*(k18 + k19)*(k15 + k16)*k20*k22*k106*x19/(k21 + k22)
/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k12 + k13)*(k68 + k107)*k
62*k64/(k63 + k64)/x19/k67/k13/k11*b1/b2

x10   |--> x10

x11   |--> (k18 + k19)*(k15 + k16)*x19*k106*k22*k20*(k12 + k13)*k9*x10/(k10
+ k80)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k68 +
k107)*k64*k62*(k12 + k13)*k9*x10/(k10 + k80)/(k63 + k64)/x19/k67
/k13/k11*b1/b2

x12   |--> x12

x13   |--> k20*k22*k106*x19*(k18 + k19)*(k15 + k16)/k13/k14/k16/k17/x7/x15/
(k21 + k22)*x18 + (k68 + k107)*k62*k64*x12/k13/k67/x19/(k63 + k6
4)*b1/b2

x14   |--> (k15 + k16)*k106*(k18 + k19)/k17/x7/k16/k14/x15*x18

```

```

x15    |-->  x15
x16    |-->  k106*(k18 + k19)/k17/x7/k16*x18
x17    |-->  (k18 + k19)/k17/x7*x18
x18    |-->  x18
x19    |-->  x19
x20    |-->  k20*x19*k106*(k18 + k19)*(k15 + k16)/k14/k16/k17/x7/x15/(k21 + k
22)*x18
x21    |-->  x21
x22    |-->  k23*x21*k106*(k18 + k19)*(k15 + k16)/k17/x7/k16/k14/x15/(k24 + k
25)*x18
x23    |-->  k25*k23*x21*k106*(k18 + k19)*(k15 + k16)/k17/x7/k16/k14/x15/k110
/(k24 + k25)*x18
x24    |-->  x24
x25    |-->  (k15 + k16)*(k18 + k19)*(k12 + k13)*x19*k106*k22*k20*k26*x24/(k2
7 + k28)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k68 +
k107)*(k12 + k13)*k64*k62*k26*x24/(k63 + k64)/(k27 + k28)/x19/k
67/k13/k11*b1/b2
x26    |-->  (k15 + k16)*(k18 + k19)*(k12 + k13)*x19*k106*k22*k20*x24*k28*k26
*(k30 + k85)/x27/k29/(k27 + k28)/(k21 + k22)/x15/x12/x7/k85/k17/
k16/k14/k13/k11*x18 + (k68 + k107)*(k12 + k13)*k64*k62*x24*k28*k
26*(k30 + k85)/x27/k29/(k63 + k64)/(k27 + k28)/x19/k85/k67/k13/k
11*b1/b2
x27    |-->  x27
x28    |-->  k26*k28*x24*(k12 + k13)*(k18 + k19)*(k15 + k16)*k20*k22*k106*x19
/(k27 + k28)/(k21 + k22)/x15/x12/x7/k85/k17/k16/k14/k13/k11*x18
+ k26*k28*x24*k62*k64*(k68 + k107)*(k12 + k13)/(k63 + k64)/(k27
+ k28)/x19/k85/k67/k13/k11*b1/b2
x29    |-->  x29
x30    |-->  (k30 + k85)*(k18 + k19)*(k15 + k16)*(k12 + k13)*x19*k106*k22*k20
*x29*x24*k31*k28*k26/(k32 + k33)/(k27 + k28)/(k21 + k22)/x27/x15
/x12/x7/k85/k29/k17/k16/k14/k13/k11*x18 + (k68 + k107)*(k30 + k8
5)*(k12 + k13)*k64*k62*x29*x24*k31*k28*k26/(k63 + k64)/(k32 + k3
3)/(k27 + k28)/x27/x19/k85/k67/k29/k13/k11*b1/b2
x31    |-->  k20*k22*k26*k28*k31*k33*k106*x19*x24*x29*(k18 + k19)*(k15 + k16)
*(k30 + k85)*(c1*x33*k90*k36 + k35*k90 + k35*k37)*(k12 + k13)/k1
1/k13/k14/k16/k17/k29/k34/k36/k85/k90/x7/x12/x15/x27/x33/c1/(k32
+ k33)/(k27 + k28)/(k21 + k22)*x18 - 2/k34*k35/k36/k90*k91/x33/
c1*(k37 + k90)*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)
+ (k68 + k107)*(4*k11*k33*k35*k44*k47*k51*k59*k61*k63*k13*k85*k9
0*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k47*k51*k
57*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k
33*k35*k44*k47*k51*k57*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27
*x33*k27*k29 + 4*k11*k33*k35*k44*k47*k51*k57*k61*k63*k13*k85*k90
*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k47*k51*k5
7*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k
33*k35*k44*k47*k50*k59*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*
x33*k28*k29 + 4*k11*k33*k35*k44*k47*k50*k59*k61*k13*k64*k85*k90*
k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k47*k50*k59
*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k3
3*k35*k44*k47*k50*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x
33*k27*k29 + 4*k11*k33*k35*k44*k47*k50*k57*k61*k13*k64*k85*k90*k
92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k47*k50*k57*

```

[illegible]

[illegible]

9 + 4*k11*k32*k35*k37*k46*k48*k50*k57*k61*k63*k13*k85*k92*k93*k9
4*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k37*k46*k48*k50*k57*k61*k
63*k13*k85*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k37*
k45*k46*k48*k51*k59*k61*k13*k64*k85*k93*k94*k115*x27*x39*k28*k29
+ 4*k11*k32*k35*k37*k45*k46*k48*k51*k59*k61*k13*k64*k85*k93*k94
*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k37*k45*k46*k48*k51*k59*k6
1*k63*k13*k85*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k37*k
45*k46*k48*k51*k59*k61*k63*k13*k85*k93*k94*k115*x27*x39*k27*k29
+ 4*k11*k32*k35*k37*k45*k46*k48*k51*k57*k61*k13*k64*k85*k93*k94*
k115*x27*x39*k28*k29 + 4*k11*k32*k35*k37*k45*k46*k48*k51*k57*k61
*k13*k64*k85*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k37*k4
5*k46*k48*k51*k57*k61*k63*k13*k85*k93*k94*k115*x27*x39*k28*k29 +
4*k11*k32*k35*k37*k45*k46*k48*k51*k57*k61*k63*k13*k85*k93*k94*k
115*x27*x39*k27*k29 + 4*k11*k32*k35*k37*k45*k46*k48*k51*k59*k61*
k13*k64*k85*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k37*k45
*k46*k48*k50*k59*k61*k13*k64*k85*k93*k94*k115*x27*x39*k27*k29 +
4*k11*k32*k35*k37*k45*k46*k48*k50*k59*k61*k63*k13*k85*k93*k94*k1
15*x27*x39*k28*k29 + 4*k11*k32*k35*k37*k45*k46*k48*k50*k59*k61*k
63*k13*k85*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k37*k45*
k46*k48*k50*k57*k61*k13*k64*k85*k93*k94*k115*x27*x39*k28*k29 + 4
*k11*k32*k35*k37*k45*k46*k48*k50*k57*k61*k13*k64*k85*k93*k94*k11
5*x27*x39*k27*k29 + 4*k11*k32*k35*k37*k45*k46*k48*k50*k57*k61*k6
3*k13*k85*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k37*k45*k
46*k48*k50*k57*k61*k63*k13*k85*k93*k94*k115*x27*x39*k27*k29 + 4*
k11*k32*k35*k37*k44*k48*k51*k59*k61*k13*k64*k85*k92*k93*k94*k115
*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k48*k51*k59*k61*k13*k64
*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k4
8*k51*k59*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k
11*k32*k35*k37*k44*k48*k51*k59*k61*k63*k13*k85*k92*k93*k94*k115*
x27*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k48*k51*k57*k61*k13*k64*
k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k48
*k51*k57*k61*k13*k64*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k1
1*k32*k35*k37*k44*k48*k51*k57*k61*k63*k13*k85*k92*k93*k94*k115*x
27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k48*k51*k57*k61*k63*k13*k
85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k48*
k50*k59*k61*k13*k64*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11
*k32*k35*k37*k44*k48*k50*k59*k61*k13*k64*k85*k92*k93*k94*k115*x2
7*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k48*k50*k59*k61*k63*k13*k8
5*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k48*k
50*k59*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*
k32*k35*k37*k44*k48*k50*k57*k61*k13*k64*k85*k92*k93*k94*k115*x27
*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k48*k50*k57*k61*k13*k64*k85
*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k48*k5
0*k57*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k
32*k35*k37*k44*k48*k50*k57*k61*k63*k13*k85*k92*k93*k94*k115*x27*
x33*k27*k29 + 4*k11*k32*k35*k37*k44*k47*k51*k59*k61*k13*k64*k85*
k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k47*k51
*k59*k61*k13*k64*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k3
2*k35*k37*k44*k47*k51*k59*k61*k63*k13*k85*k92*k93*k94*k115*x27*x
33*k28*k29 + 4*k11*k32*k35*k37*k44*k47*k51*k59*k61*k63*k13*k85*k
92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k47*k51*
k57*k61*k13*k64*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32
*k35*k37*k44*k47*k51*k57*k61*k13*k64*k85*k92*k93*k94*k115*x27*x3
3*k27*k29 + 4*k11*k32*k35*k37*k44*k47*k51*k57*k61*k63*k13*k85*k9
2*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k47*k51*k
57*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*
k35*k37*k44*k47*k50*k59*k61*k13*k64*k85*k92*k93*k94*k115*x27*x33
*k28*k29 + 4*k11*k32*k35*k37*k44*k47*k50*k59*k61*k13*k64*k85*k92
*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k47*k50*k5
9*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k
35*k37*k44*k47*k50*k59*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*
k27*k29 + 4*k11*k32*k35*k37*k44*k47*k50*k57*k61*k13*k64*k85*k92*
k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k47*k50*k57
*k61*k13*k64*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k3
5*k37*k44*k47*k50*k57*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*k
28*k29 + 4*k11*k32*k35*k37*k44*k47*k50*k57*k61*k63*k13*k85*k92*k
93*k94*k115*x27*x33*k27*k29 + k33*k35*k46*k48*k49*k51*k57*k58*k6
0*k62*k13*k64*k90*k92*x24*k26*x29*x39*x42*x49*x52*c1*k28*k30*k31

+ k33*k35*k46*k48*k49*k51*k57*k58*k60*k62*k13*k64*k85*k90*k92*x
24*k26*x29*x39*x42*x49*x52*c1*k28*k31 + k33*k35*k46*k48*k12*k49*
k51*k57*k58*k60*k62*k64*k90*k92*x24*k26*x29*x39*x42*x49*x52*c1*k
28*k30*k31 + k33*k35*k46*k48*k12*k49*k51*k57*k58*k60*k62*k64*k85
*k90*k92*x24*k26*x29*x39*x42*x49*x52*c1*k28*k31 + k33*k35*k45*k4
6*k48*k49*k51*k57*k58*k60*k62*k13*k64*k90*x24*k26*x29*x39*x42*x4
9*x52*c1*k28*k30*k31 + k33*k35*k45*k46*k48*k49*k51*k57*k58*k60*k
62*k13*k64*k85*k90*x24*k26*x29*x39*x42*x49*x52*c1*k28*k31 + k33*
k35*k45*k46*k48*k12*k49*k51*k57*k58*k60*k62*k64*k90*x24*k26*x29*
x39*x42*x49*x52*c1*k28*k30*k31 + k33*k35*k45*k46*k48*k12*k49*k51
*k57*k58*k60*k62*k64*k85*k90*x24*k26*x29*x39*x42*x49*x52*c1*k28*
k31 + k33*k35*k37*k46*k48*k49*k51*k57*k58*k60*k62*k13*k64*k92*x2
4*k26*x29*x39*x42*x49*x52*c1*k28*k30*k31 + k33*k35*k37*k46*k48*k
49*k51*k57*k58*k60*k62*k13*k64*k85*k92*x24*k26*x29*x39*x42*x49*x
52*c1*k28*k31 + k33*k35*k37*k46*k48*k12*k49*k51*k57*k58*k60*k62*
k64*k92*x24*k26*x29*x39*x42*x49*x52*c1*k28*k30*k31 + k33*k35*k37
*k46*k48*k12*k49*k51*k57*k58*k60*k62*k64*k85*k92*x24*k26*x29*x39
*x42*x49*x52*c1*k28*k31 + k33*k35*k37*k45*k46*k48*k49*k51*k57*k5
8*k60*k62*k13*k64*x24*k26*x29*x39*x42*x49*x52*c1*k28*k30*k31 + k
33*k35*k37*k45*k46*k48*k49*k51*k57*k58*k60*k62*k13*k64*k85*x24*k
26*x29*x39*x42*x49*x52*c1*k28*k31 + k33*k35*k37*k45*k46*k48*k12*
k49*k51*k57*k58*k60*k62*k64*x24*k26*x29*x39*x42*x49*x52*c1*k28*k
30*k31 + k33*k35*k37*k45*k46*k48*k12*k49*k51*k57*k58*k60*k62*k64
*k85*x24*k26*x29*x39*x42*x49*x52*c1*k28*k31 + k33*k36*k46*k48*k4
9*k51*k57*k58*k60*k62*k13*k64*k90*k92*x24*k26*x29*x33*x39*x42*x4
9*x52*c1^2*k28*k30*k31 + k33*k36*k46*k48*k49*k51*k57*k58*k60*k62
*k13*k64*k85*k90*k92*x24*k26*x29*x33*x39*x42*x49*x52*c1^2*k28*k3
1 + k33*k36*k46*k48*k12*k49*k51*k57*k58*k60*k62*k64*k90*k92*x24*
k26*x29*x33*x39*x42*x49*x52*c1^2*k28*k30*k31 + k33*k36*k46*k48*k
12*k49*k51*k57*k58*k60*k62*k64*k85*k90*k92*x24*k26*x29*x33*x39*x
42*x49*x52*c1^2*k28*k31 + k33*k36*k45*k46*k48*k49*k51*k57*k58*k6
0*k62*k13*k64*k90*x24*k26*x29*x33*x39*x42*x49*x52*c1^2*k28*k30*k
31 + k33*k36*k45*k46*k48*k49*k51*k57*k58*k60*k62*k13*k64*k85*k90
*x24*k26*x29*x33*x39*x42*x49*x52*c1^2*k28*k31 + k33*k36*k45*k46*
k48*k12*k49*k51*k57*k58*k60*k62*k64*k90*x24*k26*x29*x33*x39*x42*
x49*x52*c1^2*k28*k30*k31 + k33*k36*k45*k46*k48*k12*k49*k51*k57*k
58*k60*k62*k64*k85*k90*x24*k26*x29*x33*x39*x42*x49*x52*c1^2*k28*
k31 + 4*k11*k33*k35*k46*k48*k50*k59*k61*k13*k64*k85*k90*k92*k93*
k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k46*k48*k50*k59*k61*k63
*k13*k85*k90*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k4
6*k48*k50*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x39*k27*k
29 + 4*k11*k33*k35*k46*k48*k50*k57*k61*k13*k64*k85*k90*k92*k93*k
94*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k46*k48*k50*k57*k61*k13*
k64*k85*k90*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k46
*k48*k50*k57*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x39*k28*k2
9 + 4*k11*k33*k35*k46*k48*k50*k57*k61*k63*k13*k85*k90*k92*k93*k9
4*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k45*k46*k48*k51*k59*k61*k
13*k64*k85*k90*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k45*
k46*k48*k51*k59*k61*k13*k64*k85*k90*k93*k94*k115*x27*x39*k27*k29
+ 4*k11*k33*k35*k45*k46*k48*k51*k59*k61*k63*k13*k85*k90*k93*k94
*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k45*k46*k48*k51*k59*k61*k6
3*k13*k85*k90*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k45*k
46*k48*k51*k57*k61*k13*k64*k85*k90*k93*k94*k115*x27*x39*k28*k29
+ 4*k11*k33*k35*k45*k46*k48*k51*k57*k61*k13*k64*k85*k90*k93*k94*
k115*x27*x39*k27*k29 + 4*k11*k33*k35*k45*k46*k48*k51*k57*k61*k13*
k63*k13*k85*k90*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k45*
k46*k48*k51*k57*k61*k63*k13*k85*k90*k93*k94*k115*x27*x39*k27*k29 +
4*k11*k33*k35*k45*k46*k48*k50*k59*k61*k13*k64*k85*k90*k93*k94*k
115*x27*x39*k28*k29 + 4*k11*k33*k35*k45*k46*k48*k50*k59*k61*k13*
k64*k85*k90*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k45*k46
*k48*k50*k59*k61*k63*k13*k85*k90*k93*k94*k115*x27*x39*k28*k29 +
4*k11*k33*k35*k45*k46*k48*k50*k59*k61*k63*k13*k85*k90*k93*k94*k1
15*x27*x39*k27*k29 + 4*k11*k33*k35*k45*k46*k48*k50*k57*k61*k13*k
64*k85*k90*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k45*k46*
k48*k50*k57*k61*k13*k64*k85*k90*k93*k94*k115*x27*x39*k27*k29 + 4
*k11*k33*k35*k45*k46*k48*k50*k57*k61*k63*k13*k85*k90*k93*k94*k11
5*x27*x39*k28*k29 + 4*k11*k33*k35*k45*k46*k48*k50*k57*k61*k63*k1
3*k85*k90*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k44*k48*k

```

51*k59*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*
k11*k33*k35*k44*k48*k51*k59*k61*k13*k64*k85*k90*k92*k93*k94*k115
*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k48*k51*k59*k61*k63*k13*k85
*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k48*k5
1*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k
11*k33*k35*k44*k48*k51*k57*k61*k13*k64*k85*k90*k92*k93*k94*k115*
x27*x33*k28*k29 + 4*k11*k33*k35*k44*k48*k51*k57*k61*k13*k64*k85*
k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k48*k51
*k57*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k1
1*k33*k35*k44*k48*k51*k57*k61*k63*k13*k85*k90*k92*k93*k94*k115*x
27*x33*k27*k29 + 4*k11*k33*k35*k44*k48*k50*k59*k61*k13*k64*k85*k
90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k48*k50*
k59*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11
*k33*k35*k44*k48*k50*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x2
7*x33*k28*k29 + 4*k11*k33*k35*k44*k48*k50*k59*k61*k63*k13*k85*k9
0*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k48*k50*k
57*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*
k33*k35*k44*k48*k50*k57*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27
*x33*k27*k29 + 4*k11*k33*k35*k44*k48*k50*k57*k61*k63*k13*k85*k90
*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k48*k50*k5
7*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k
33*k35*k44*k47*k51*k59*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*
x33*k28*k29 + 4*k11*k33*k35*k44*k47*k51*k59*k61*k13*k64*k85*k90*
k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k47*k51*k59
*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29)/c1^2/k60/
x52/k57/k58/x49/k51/k49/x42/k48/k46/x39/k67/x19/k13/k11/k29/x27/
k85/k90/(k63 + k64)/(k32 + k33)/(k27 + k28)/(k45 + k92)/k36/x33/
k34*b1/b2

```

```

x32    |--> k20*k22*k26*k28*k31*k33*k106*x19*x24*x29*(k30 + k85)*(k18 + k19)
*(k15 + k16)*(k12 + k13)*(k37 + k90)/k11/k13/k14/k16/k17/k29/k36
/k85/k90/x7/x12/x15/x27/x33/c1/(k32 + k33)/(k27 + k28)/(k21 + k2
2)*x18 - 2/k36/k90*k91/x33/c1*(k37 + k90)*RootOf(a1 + a2*_Z + a3
*_Z^2 + a4*_Z^3 + a5*_Z^4) + (k68 + k107)*(4*k11*k33*k44*k47*k50
*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k3
3*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k
29 + k33*k46*k48*k49*k51*k57*k58*k60*k62*k64*k13*k92*x24*x29*x39
*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k46*k48*k49*k51*k57*k58*k6
0*k62*k64*k85*k13*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28*k31 + k
33*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*k92*x24*x29*x39*k26*x
42*x49*x52*c1*k28*k30*k31 + 4*k11*k32*k44*k48*k50*k57*k61*k63*k8
5*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k50*k
57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*
k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29
+ 4*k11*k32*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x2
7*x33*k27*k29 + 4*k11*k32*k44*k47*k51*k59*k61*k63*k85*k13*k92*k9
3*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k51*k59*k61*k63*k
85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k51*
k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32
*k44*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k2
9 + 4*k11*k32*k46*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x
27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k57*k61*k64*k85*k13*k92*k
93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k51*k57*k61*k63*
k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51
*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k3
2*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*k
29 + 4*k11*k32*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*
x27*x39*k27*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k63*k85*k13*k92*
k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k63
*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k5
0*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k
32*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*
k29 + 4*k11*k33*k46*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115
*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k64*k85*k13*k92
*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k50*k57*k6
1*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k
48*k50*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*
k32*k45*k46*k48*k50*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39*k28

```

*k29 + 4*k11*k32*k45*k46*k48*k50*k57*k61*k63*k85*k13*k93*k94*k11
5*x27*x39*k27*k29 + 4*k11*k32*k44*k48*k51*k59*k61*k64*k85*k13*k9
2*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k51*k59*k61*k
64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + k33*k45*k46*k48*k4
9*k51*k57*k58*k60*k62*k64*k13*x24*x29*x39*k26*x42*x49*x52*c1*k28
*k30*k31 + k33*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*k85*k92*x
24*x29*x39*k26*x42*x49*x52*c1*k28*k31 + k33*k45*k46*k48*k49*k51*
k57*k58*k60*k62*k64*k85*k13*x24*x29*x39*k26*x42*x49*x52*c1*k28*k
31 + k33*k45*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*x24*x29*x39
*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k45*k46*k48*k49*k51*k12*k5
7*k58*k60*k62*k64*k85*x24*x29*x39*k26*x42*x49*x52*c1*k28*k31 + 4
*k11*k33*k44*k47*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x3
3*k28*k29 + 4*k11*k33*k44*k47*k50*k59*k61*k63*k85*k13*k92*k93*k9
4*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k47*k50*k57*k61*k64*k85*k
13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k50*k57*
k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44
*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 +
4*k11*k33*k44*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x
33*k27*k29 + 4*k11*k33*k44*k48*k51*k59*k61*k63*k85*k13*k92*k93*k
94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k51*k59*k61*k63*k85*
k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k51*k57
*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k4
4*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 +
4*k11*k32*k44*k48*k51*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*
x33*k28*k29 + 4*k11*k32*k44*k48*k51*k59*k61*k63*k85*k13*k92*k93*
k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k48*k51*k57*k61*k64*k85
*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k51*k5
7*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k
46*k48*k51*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29
+ 4*k11*k33*k45*k46*k48*k51*k59*k61*k63*k85*k13*k93*k94*k115*x27
*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*k59*k61*k63*k85*k13*k93
*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k51*k57*k61*k6
4*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k
51*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*
k45*k46*k48*k51*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29
+ 4*k11*k33*k45*k46*k48*k51*k57*k61*k63*k85*k13*k93*k94*k115*x2
7*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k50*k59*k61*k64*k85*k13*k9
3*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k50*k59*k61*k
64*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*
k50*k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33
*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*k2
9 + 4*k11*k33*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x
27*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k57*k61*k63*k85*k13*k92*k
93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k50*k57*k61*k63*
k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48
*k51*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k3
3*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k
29 + 4*k11*k33*k45*k46*k48*k50*k57*k61*k64*k85*k13*k93*k94*k115*
x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k50*k57*k61*k64*k85*k13*
k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k50*k57*k61
*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k4
8*k50*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k
33*k45*k46*k48*k50*k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*
k29 + 4*k11*k33*k46*k48*k51*k59*k61*k63*k85*k13*k92*k93*k94*k115
*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k51*k57*k61*k64*k85*k13*k92
*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k51*k57*k61*k6
4*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k
51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*
k33*k46*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27
*k29 + 4*k11*k33*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k11
5*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k50*k59*k61*k64*k85*k13*k9
2*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k59*k61*k
63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*
k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11
*k32*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k2
8*k29 + 4*k11*k32*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k1
15*x27*x33*k27*k29 + 4*k11*k32*k44*k48*k51*k57*k61*k63*k85*k13*k
92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k51*k57*k61*

```

k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k48
*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k1
1*k32*k44*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k
27*k29 + 4*k11*k32*k44*k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k
115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k50*k59*k61*k63*k85*k13*
k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k46*k48*k50*k57*k61
*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k4
8*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k
11*k32*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*
k28*k29 + 4*k11*k32*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*
k115*x27*x39*k27*k29 + 4*k11*k33*k44*k47*k50*k57*k61*k63*k85*k13
*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k50*k57*k6
1*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k46*k
48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*
k11*k32*k46*k48*k51*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39
*k27*k29 + 4*k11*k32*k46*k48*k51*k59*k61*k63*k85*k13*k92*k93*k94
*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k59*k61*k63*k85*k1
3*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k44*k47*k51*k57*k
61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*
k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4
*k11*k32*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x3
3*k28*k29 + 4*k11*k32*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k9
4*k115*x27*x33*k27*k29 + 4*k11*k32*k45*k46*k48*k51*k59*k61*k63*k
85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k51*
k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k45
*k46*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29
+ 4*k11*k32*k45*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k115*x27*x
39*k27*k29 + 4*k11*k32*k45*k46*k48*k51*k57*k61*k63*k85*k13*k93*k
94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k51*k57*k61*k63*
k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k44*k48*k51*k57
*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k4
4*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 +
4*k11*k33*k44*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*
x33*k28*k29 + 4*k11*k33*k44*k48*k50*k59*k61*k64*k85*k13*k92*k93*
k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k50*k59*k61*k63*k85
*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k50*k5
9*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k
44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29
+ 4*k11*k33*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27
*x33*k27*k29 + 4*k11*k33*k44*k48*k50*k57*k61*k63*k85*k13*k92*k93
*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k50*k57*k61*k63*k8
5*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k47*k51*k
59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*
k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29
+ 4*k11*k33*k44*k47*k51*k59*k61*k63*k85*k13*k92*k93*k94*k115*x2
7*x33*k28*k29 + 4*k11*k33*k44*k47*k51*k59*k61*k63*k85*k13*k92*k9
3*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k50*k59*k61*k63*k
85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k50*
k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32
*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k2
9 + 4*k11*k32*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x
27*x33*k27*k29 + 4*k11*k32*k44*k47*k50*k57*k61*k63*k85*k13*k92*k
93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k50*k57*k61*k63*
k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k45*k46*k48
*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k3
2*k45*k46*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k
29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k63*k85*k13*k93*k94*k115*
x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k63*k85*k13*
k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k44*k47*k51*k57*k61*k64
*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k5
1*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k
33*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*
k29 + 4*k11*k33*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115
*x27*x33*k27*k29)*(k37 + k90)/x33/k36/(k63 + k64)/(k45 + k92)/(k
32 + k33)/(k27 + k28)/k90/k85/x27/k29/k11/k13/x19/k67/x39/k46/k4
8/x42/k49/k51/x49/k58/k57/x52/k60/c1^2*b1/b2

```

x33 | --> x33

```

x34    |--> (k12 + k13)*(k30 + k85)*(k15 + k16)*(k18 + k19)*x29*x24*x19*k106
          *k33*k31*k28*k26*k22*k20/k11/k13/k14/k16/k17/k29/k85/k90/x7/x12/
          x15/x27/(k32 + k33)/(k27 + k28)/(k21 + k22)*x18 - 2/k90*k91*Root
          Of(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (k68 + k107)*(4*k
          11*k33*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*
          k28*k29 + 4*k11*k33*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*
          k115*x27*x33*k27*k29 + k33*k46*k48*k49*k51*k57*k58*k60*k62*k64*k
          13*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k46*k48*
          k49*k51*k57*k58*k60*k62*k64*k85*k13*k92*x24*x29*x39*k26*x42*x49*
          x52*c1*k28*k31 + k33*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*k92
          *x24*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + 4*k11*k32*k44*k48*
          k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11
          *k32*k44*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k2
          7*k29 + 4*k11*k32*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k1
          15*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k51*k59*k61*k64*k85*k13*k
          92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k51*k59*k61*
          k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47
          *k51*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k1
          1*k32*k44*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*
          k28*k29 + 4*k11*k32*k44*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k
          115*x27*x33*k27*k29 + 4*k11*k32*k46*k48*k51*k57*k61*k64*k85*k13*
          k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k57*k61
          *k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k4
          8*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k
          11*k32*k46*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*
          k27*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*
          k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k64*k85*k13
          *k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k50*k59*k6
          1*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k
          48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*
          k11*k32*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39
          *k28*k29 + 4*k11*k32*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94
          *k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k64*k85*k1
          3*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k51*k59*k
          61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k45*
          k46*k48*k50*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4
          *k11*k32*k45*k46*k48*k50*k57*k61*k64*k85*k13*k93*k94*k115*x27*x3
          9*k27*k29 + 4*k11*k32*k45*k46*k48*k50*k57*k61*k63*k85*k13*k93*k9
          4*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k50*k57*k61*k63*k
          85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k44*k48*k51*k59*
          k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44
          *k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 +
          k33*k45*k46*k48*k49*k51*k57*k58*k60*k62*k64*k13*x24*x29*x39*k26*
          x42*x49*x52*c1*k28*k30*k31 + k33*k46*k48*k49*k51*k12*k57*k58*k60
          *k62*k64*k85*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28*k31 + k33*k4
          5*k46*k48*k49*k51*k57*k58*k60*k62*k64*k85*k13*x24*x29*x39*k26*x4
          2*x49*x52*c1*k28*k31 + k33*k45*k46*k48*k49*k51*k12*k57*k58*k60*k
          62*k64*x24*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k45*k46*
          k48*k49*k51*k12*k57*k58*k60*k62*k64*k85*x24*x29*x39*k26*x42*x49*
          x52*c1*k28*k31 + 4*k11*k33*k44*k47*k50*k59*k61*k63*k85*k13*k92*k
          93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k50*k59*k61*k63*
          k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k47*k50
          *k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k3
          3*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k
          29 + 4*k11*k33*k44*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*
          x27*x33*k28*k29 + 4*k11*k33*k44*k48*k51*k59*k61*k64*k85*k13*k92*
          k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k51*k59*k61*k63
          *k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k5
          1*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k
          33*k44*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*
          k29 + 4*k11*k33*k44*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115
          *x27*x33*k27*k29 + 4*k11*k32*k44*k48*k51*k59*k61*k63*k85*k13*k92
          *k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k51*k59*k61*k6
          3*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k48*k
          51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*
          k32*k44*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27
          *k29 + 4*k11*k33*k46*k48*k51*k59*k61*k63*k85*k13*k92*k93*k94*k11

```


5*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*k59*k61*k63*k85*k1
3*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*k59*k
61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*
k48*k51*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11
*k33*k45*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k2
7*k29 + 4*k11*k33*k45*k46*k48*k51*k57*k61*k63*k85*k13*k93*k94*k1
15*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*k57*k61*k63*k85*k
13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k50*k59*
k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46
*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k1
1*k33*k45*k46*k48*k50*k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k
28*k29 + 4*k11*k33*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k
115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k50*k57*k61*k64*k85*k13*
k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k57*k61
*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k4
8*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k
11*k33*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*
k28*k29 + 4*k11*k33*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*
k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k50*k57*k61*k64*k85
*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k50*k5
7*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k
46*k48*k50*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*
k11*k33*k45*k46*k48*k50*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39
*k27*k29 + 4*k11*k33*k45*k46*k48*k50*k59*k61*k63*k85*k13*k93*k94
*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k63*k85*k1
3*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k51*k57*k
61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*
k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4
*k11*k33*k46*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x3
9*k28*k29 + 4*k11*k33*k46*k48*k51*k57*k61*k63*k85*k13*k92*k93*k9
4*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k59*k61*k64*k85*k
13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k50*k59*
k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46
*k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 +
4*k11*k33*k46*k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x
39*k27*k29 + 4*k11*k32*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k
94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k50*k57*k61*k64*k85*
k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k48*k51*k57
*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k4
4*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 +
4*k11*k32*k44*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*
x33*k28*k29 + 4*k11*k32*k44*k48*k50*k59*k61*k64*k85*k13*k92*k93*
k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k48*k50*k59*k61*k63*k85
*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k50*k5
9*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k
46*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29
+ 4*k11*k32*k46*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27
*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93
*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k51*k59*k61*k6
4*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k44*k47*k50*k
57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*
k44*k47*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29
+ 4*k11*k32*k46*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x2
7*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k59*k61*k64*k85*k13*k92*k9
3*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k51*k59*k61*k63*k
85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*
k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32
*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k2
9 + 4*k11*k32*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x
27*x33*k27*k29 + 4*k11*k32*k44*k47*k50*k59*k61*k64*k85*k13*k92*k
93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k50*k59*k61*k64*
k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k45*k46*k48
*k51*k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k3
2*k45*k46*k48*k51*k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k
29 + 4*k11*k32*k45*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k115*
x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k51*k57*k61*k64*k85*k13*
k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k51*k57*k61
*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k4

```

8*k51*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k
33*k44*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*
k29 + 4*k11*k33*k44*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115
*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k50*k59*k61*k64*k85*k13*k92
*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k50*k59*k61*k6
4*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k
50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*
k33*k44*k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27
*k29 + 4*k11*k33*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k11
5*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k50*k57*k61*k64*k85*k13*k9
2*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k50*k57*k61*k
63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*
k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*
k33*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k2
8*k29 + 4*k11*k33*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k1
15*x27*x33*k27*k29 + 4*k11*k33*k44*k47*k51*k59*k61*k63*k85*k13*k
92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k51*k59*k61*
k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k47
*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k1
1*k32*k44*k47*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k
27*k29 + 4*k11*k32*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k94*k
115*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k50*k57*k61*k64*k85*k13*
k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k50*k57*k61
*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k4
7*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k
11*k32*k45*k46*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*
k28*k29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k64*k85*k13*k93*k94*
k115*x27*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k63*k85
*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k50*k5
9*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k44*k
47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*
k11*k33*k44*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33
*k27*k29 + 4*k11*k33*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94
*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k51*k57*k61*k63*k85*k1
3*k92*k93*k94*k115*x27*x33*k27*k29)/(k63 + k64)/(k45 + k92)/(k32
+ k33)/(k27 + k28)/k90/k85/x27/k29/k11/k13/x19/k67/x39/k46/k48/
x42/k49/k51/x49/k58/k57/x52/k60/c1*b1/b2

x35 |--> (k41 + k91)/k40/c1/x33*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a
5*_Z^4)

x36 |--> RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)

x37 |--> -k93*k61*k94*k115*(k68 + k107)*(k57 + k59)*(k50 + k51)*(k47 + k4
8)/x39/k46/x42/k49/k51/x49/k58/k57/x52/k60/k67/x19/c1^2/k48*b1/b
2

x38 |--> -k44*x33*(k47 + k48)*(k68 + k107)*(k57 + k59)*(k50 + k51)*k115*k
94*k61*k93/k48/c1/x19/k67/k60/x52/k57/k58/x49/k51/k49/x42/k46/x3
9/(k45 + k92)*b1/b2

x39 |--> x39

x40 |--> -(k68 + k107)*(k57 + k59)*(k50 + k51)*k115*k94*k61*k93/x42/k49/k
51/x49/k58/k57/x52/k60/k67/x19/c1/k48*b1/b2

x41 |--> -(k68 + k107)*(k57 + k59)*(k50 + k51)*k115*k94*k61/c1/x19/k67/k6
0/x52/k57/k58/x49/k51/k49/x42*b1/b2

x42 |--> x42

x43 |--> -k61*k94*k115*(k68 + k107)*(k57 + k59)/k67/x19/k60/x52/k57/k58/x
49/k51*b1/b2

x44 |--> -k61*k94*(k68 + k107)*(k57 + k59)*(k56 + k115)/k67/x19/k60/x52/k
57/k58/x49/k55*b1/b2

x45 |--> x45

```

```

x46  |--> -k52*x45*k61*k94*k115*(k68 + k107)*(k57 + k59)*(k50 + k51)/x19/(
      k53 + k54)/k67/k60/x52/k57/k58/x49/k51/k49/x42*b1/b2

x47  |--> -(k99*k100 + k66*k70 + k66*k100 + k99*k70 + k69*x19*k100)*k54*k5
      2*x45*k61*k94*k115*(k68 + k107)*(k57 + k59)*(k50 + k51)/k67/k60/
      x52/k57/k58/x49/k51/k49/x42/(k99*k100 + k99*k70 + k69*x19*k100)/
      (k53 + k54)/x19/k65*b1/b2

x48  |--> -k94*(k57 + k59)*(k68 + k107)*k61/x52/k60/k67/x19/k57/k58/x49*b1
      /b2

x49  |--> x49

x50  |--> -k94*(k68 + k107)*k61/x52/k60/k67/x19/k57*b1/b2

x51  |--> -(k68 + k107)*k61/x52/k60/k67/x19*b1/b2

x52  |--> x52

x53  |--> -(k68 + k107)/k67/x19*b1/b2

x54  |--> -k62*x12*(k68 + k107)/k67/x19/(k63 + k64)*b1/b2

x55  |--> -(k70 + k100)*k54*k52*x45*k61*k94*k115*(k68 + k107)*(k57 + k59)*
      (k50 + k51)/x19/(k53 + k54)/(k99*k100 + k99*k70 + k69*x19*k100)/
      x42/k49/k51/x49/k58/k57/x52/k60/k67*b1/b2

x56  |--> -b1/b2

x57  |--> -k69*k54*k52*x45*k61*k94*k115*(k68 + k107)*(k57 + k59)*(k50 + k5
      1)/(k53 + k54)/(k99*k100 + k99*k70 + k69*x19*k100)/x42/k49/k51/x
      49/k58/k57/x52/k60/k67*b1/b2

x58  |--> k20*k22*k106*x19*(k18 + k19)*(k15 + k16)/k17/x7/k16/k14/x15/k103
      /(k21 + k22)*x18

x59  |--> (k41*k39 + c1*k40*x33*k91 + k91*k39)/c1/k38/x33/k40/c1*RootOf(a1
      + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)-2*k93*k115*k94*k61*(k57
      + k59)*(k50 + k51)*(k68 + k107)*(k46*x39*k92*k48 + k46*x39*k45*k
      48 + x33*k44*k92*k48 + x33*k44*k92*k47)/c1/(k45 + k92)/k67/k60/x
      52/k57/k58/x49/k51/k49/x42/x19/k48/k46/x39/k38/c1*b1/b2

x60  |--> -k93*k115*k94*k61*(k50 + k51)*(k68 + k107)*(k57 + k59)*(k46*c1*x
      39*k45*k48 + k43*k45*k48 + k44*x33*c1*k92*k48 + k46*c1*x39*k92*k
      48 + k44*x33*c1*k92*k47 + k43*k92*k48 + k43*k45*k47 + k43*k92*k4
      7)/c1/k42/k46/k48/k49/k51/k57/k58/k60/k67/x19/x39/x42/x49/x52/c1
      ^2/(k45 + k92)*b1/b2

c1   |--> c1

```

The unsubstituted steady state reaction velocity vector $\mathbf{vbar} = \mathbf{psi_ss}[v]$ is given by

```

vbar[ 1] = k1*((-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19*k11*k13*k
      14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18*k20*k22*k
      106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 + k80*k9*x1
      0*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k16*k19*k20*k22*
      k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k80*k9*x10*
      k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*k20*k22*k1
      06*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80*k9*x10*k1
      2*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*
      k80*k21)*(k7 + k8)*k75*x5*k4*(k2 + k3)/x2/k1/(k5 + k75)/k3/k6/k1
      1/k13/k14/k16/k17/x7^2/x12/x15/(k21 + k22)/k8/(k10 + k80)*x18 +
      (k68 + k107)*(k12 + k13)*k64*k62*x10*k9*k80*(k7 + k8)*k75*x5*k4*
      (k2 + k3)/x7/x2/k1/(k5 + k75)/k3/k6/k11/k13/k67/x19/(k63 + k64)/
      k8/(k10 + k80)*b1/b2)*x2

```

```

vbar[ 2] = k2*(k4*x5*k75*(k7 + k8)*(-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80
*k22 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k
12*k16*k18*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15
*k10*k21 + k80*k9*x10*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*
k13*k16*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k1
06*x19 + k80*k9*x10*k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k1
2*k15*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106
*x19 + k80*k9*x10*k12*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14
*k16*k17*x7*x12*x15*k80*k21)/(k5 + k75)/k3/k6/k11/k13/k14/k16/k1
7/x7^2/x12/x15/(k21 + k22)/k8/(k10 + k80)*x18 + k4*x5*k75*(k7 +
k8)*k80*k9*x10*k62*k64*(k68 + k107)*(k12 + k13)/x7/(k5 + k75)/k3
/k6/k11/k13/k67/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2)

vbar[ 3] = k3*(k4*x5*k75*(k7 + k8)*(-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80
*k22 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k
12*k16*k18*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15
*k10*k21 + k80*k9*x10*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*
k13*k16*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k1
06*x19 + k80*k9*x10*k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12
*k15*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106
*x19 + k80*k9*x10*k12*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14
*k16*k17*x7*x12*x15*k80*k21)/(k5 + k75)/k3/k6/k11/k13/k14/k16/k1
7/x7^2/x12/x15/(k21 + k22)/k8/(k10 + k80)*x18 + k4*x5*k75*(k7 +
k8)*k80*k9*x10*k62*k64*(k68 + k107)*(k12 + k13)/x7/(k5 + k75)/k3
/k6/k11/k13/k67/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2)

vbar[ 4] = k4*((k7 + k8)*(-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19
*k11*k13*k14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18
*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 +
k80*k9*x10*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k16*k1
9*k20*k22*k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k
80*k9*x10*k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*
k20*k22*k106*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80
*k9*x10*k12*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x
7*x12*x15*k80*k21)/k6/k11/k13/k14/k16/k17/x7^2/x12/x15/(k21 + k2
2)/k8/(k10 + k80)*x18 + (k7 + k8)*k80*k9*x10*k62*k64*(k68 + k107
)*(k12 + k13)/x7/k6/k11/k13/k67/x19/(k63 + k64)/k8/(k10 + k80)*b
1/b2)*x5

vbar[ 5] = k5*((-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19*k11*k13*k
14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18*k20*k22*k
106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 + k80*k9*x1
0*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*
k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k80*k9*x10*
k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*k20*k22*k1
06*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80*k9*x10*k1
2*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*
k80*k21)*(k7 + k8)*k4*x5/(k5 + k75)/k6/k11/k13/k14/k16/k17/x7^2/
x12/x15/(k21 + k22)/k8/(k10 + k80)*x18 + (k68 + k107)*(k12 + k13
)*k64*k62*x10*k9*k80*(k7 + k8)*k4*x5/x7/(k5 + k75)/k6/k11/k13/k6
7/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2)

vbar[ 6] = k6*((k7 + k8)*(-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19
*k11*k13*k14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18
*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 +
k80*k9*x10*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k16*k1
9*k20*k22*k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k
80*k9*x10*k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*
k20*k22*k106*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80
*k9*x10*k12*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x
7*x12*x15*k80*k21)/k6/k11/k13/k14/k16/k17/x7^2/x12/x15/(k21 + k2
2)/k8/(k10 + k80)*x18 + (k7 + k8)*k80*k9*x10*k62*k64*(k68 + k107
)*(k12 + k13)/x7/k6/k11/k13/k67/x19/(k63 + k64)/k8/(k10 + k80)*b
1/b2)*x7

vbar[ 7] = k7*((-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19*k11*k13*k
14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18*k20*k22*k

```

```

106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 + k80*k9*x1
0*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k16*k19*k20*k22*
k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k80*k9*x10*
k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*k20*k22*k1
06*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80*k9*x10*k1
2*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*
k80*k21)/k11/k13/k14/k16/k17/x7/x12/x15/(k21 + k22)/k8/(k10 + k8
0)*x18 + k80*k9*x10*k62*k64*(k68 + k107)*(k12 + k13)/k11/k13/k67
/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2)

vbar[ 8] = k8*((-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19*k11*k13*k
14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18*k20*k22*k
106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 + k80*k9*x1
0*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k16*k19*k20*k22*
k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k80*k9*x10*
k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*k20*k22*k1
06*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80*k9*x10*k1
2*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*
k80*k21)/k11/k13/k14/k16/k17/x7/x12/x15/(k21 + k22)/k8/(k10 + k8
0)*x18 + k80*k9*x10*k62*k64*(k68 + k107)*(k12 + k13)/k11/k13/k67
/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2)

vbar[ 9] = k9*((k12 + k13)*(k18 + k19)*(k15 + k16)*k20*k22*k106*x19/(k21 +
k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k12 + k13)*(k68 + k10
7)*k62*k64/(k63 + k64)/x19/k67/k13/k11*b1/b2)*x10

vbar[ 10] = k10*((k18 + k19)*(k15 + k16)*x19*k106*k22*k20*(k12 + k13)*k9*x10
/(k10 + k80)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k
68 + k107)*k64*k62*(k12 + k13)*k9*x10/(k10 + k80)/(k63 + k64)/x1
9/k67/k13/k11*b1/b2)

vbar[ 11] = k11*((k12 + k13)*(k18 + k19)*(k15 + k16)*k20*k22*k106*x19/(k21 +
k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k12 + k13)*(k68 + k1
07)*k62*k64/(k63 + k64)/x19/k67/k13/k11*b1/b2)*x12

vbar[ 12] = k12*(k20*k22*k106*x19*(k18 + k19)*(k15 + k16)/k13/k14/k16/k17/x7
/x15/(k21 + k22)*x18 + (k68 + k107)*k62*k64*x12/k13/k67/x19/(k63
+ k64)*b1/b2)

vbar[ 13] = k13*(k20*k22*k106*x19*(k18 + k19)*(k15 + k16)/k13/k14/k16/k17/x7
/x15/(k21 + k22)*x18 + (k68 + k107)*k62*k64*x12/k13/k67/x19/(k63
+ k64)*b1/b2)

vbar[ 14] = (k15 + k16)*k106*(k18 + k19)/k17/x7/k16*x18

vbar[ 15] = k15*k106*(k18 + k19)/k17/x7/k16*x18

vbar[ 16] = k106*(k18 + k19)/k17/x7*x18

vbar[ 17] = (k18 + k19)*x18

vbar[ 18] = k18*x18

vbar[ 19] = k19*x18

vbar[ 20] = k20*(k15 + k16)*k106*(k18 + k19)/k17/x7/k16/k14/x15*x18*x19

vbar[ 21] = k21*k20*x19*k106*(k18 + k19)*(k15 + k16)/k14/k16/k17/x7/x15/(k21
+ k22)*x18

vbar[ 22] = k20*k22*k106*x19*(k18 + k19)*(k15 + k16)/k14/k16/k17/x7/x15/(k21
+ k22)*x18

vbar[ 23] = k23*(k15 + k16)*k106*(k18 + k19)/k17/x7/k16/k14/x15*x18*x21

vbar[ 24] = k24*k23*x21*k106*(k18 + k19)*(k15 + k16)/k17/x7/k16/k14/x15/(k24
+ k25)*x18

```

```

vbar[ 25] = k25*k23*x21*k106*(k18 + k19)*(k15 + k16)/k17/x7/k16/k14/x15/(k24
+ k25)*x18

vbar[ 26] = k26*((k12 + k13)*(k18 + k19)*(k15 + k16)*k20*k22*k106*x19/(k21 +
k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k12 + k13)*(k68 + k1
07)*k62*k64/(k63 + k64)/x19/k67/k13/k11*b1/b2)*x24

vbar[ 27] = k27*((k15 + k16)*(k18 + k19)*(k12 + k13)*x19*k106*k22*k20*k26*x2
4/(k27 + k28)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (
k68 + k107)*(k12 + k13)*k64*k62*k26*x24/(k63 + k64)/(k27 + k28)/
x19/k67/k13/k11*b1/b2)

vbar[ 28] = k28*((k15 + k16)*(k18 + k19)*(k12 + k13)*x19*k106*k22*k20*k26*x2
4/(k27 + k28)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (
k68 + k107)*(k12 + k13)*k64*k62*k26*x24/(k63 + k64)/(k27 + k28)/
x19/k67/k13/k11*b1/b2)

vbar[ 29] = k29*((k15 + k16)*(k18 + k19)*(k12 + k13)*x19*k106*k22*k20*x24*k2
8*k26*(k30 + k85)/x27/k29/(k27 + k28)/(k21 + k22)/x15/x12/x7/k85
/k17/k16/k14/k13/k11*x18 + (k68 + k107)*(k12 + k13)*k64*k62*x24*
k28*k26*(k30 + k85)/x27/k29/(k63 + k64)/(k27 + k28)/x19/k85/k67/
k13/k11*b1/b2)*x27

vbar[ 30] = k30*(k26*k28*x24*(k12 + k13)*(k18 + k19)*(k15 + k16)*k20*k22*k10
6*x19/(k27 + k28)/(k21 + k22)/x15/x12/x7/k85/k17/k16/k14/k13/k11
*x18 + k26*k28*x24*k62*k64*(k68 + k107)*(k12 + k13)/(k63 + k64)/
(k27 + k28)/x19/k85/k67/k13/k11*b1/b2)

vbar[ 31] = k31*((k15 + k16)*(k18 + k19)*(k12 + k13)*x19*k106*k22*k20*x24*k2
8*k26*(k30 + k85)/x27/k29/(k27 + k28)/(k21 + k22)/x15/x12/x7/k85
/k17/k16/k14/k13/k11*x18 + (k68 + k107)*(k12 + k13)*k64*k62*x24*
k28*k26*(k30 + k85)/x27/k29/(k63 + k64)/(k27 + k28)/x19/k85/k67/
k13/k11*b1/b2)*x29

vbar[ 32] = k32*((k30 + k85)*(k18 + k19)*(k15 + k16)*(k12 + k13)*x19*k106*k2
2*k20*x29*x24*k31*k28*k26/(k32 + k33)/(k27 + k28)/(k21 + k22)/x2
7/x15/x12/x7/k85/k29/k17/k16/k14/k13/k11*x18 + (k68 + k107)*(k30
+ k85)*(k12 + k13)*k64*k62*x29*x24*k31*k28*k26/(k63 + k64)/(k32
+ k33)/(k27 + k28)/x27/x19/k85/k67/k29/k13/k11*b1/b2)

vbar[ 33] = k33*((k30 + k85)*(k18 + k19)*(k15 + k16)*(k12 + k13)*x19*k106*k2
2*k20*x29*x24*k31*k28*k26/(k32 + k33)/(k27 + k28)/(k21 + k22)/x2
7/x15/x12/x7/k85/k29/k17/k16/k14/k13/k11*x18 + (k68 + k107)*(k30
+ k85)*(k12 + k13)*k64*k62*x29*x24*k31*k28*k26/(k63 + k64)/(k32
+ k33)/(k27 + k28)/x27/x19/k85/k67/k29/k13/k11*b1/b2)

vbar[ 34] = k34*(k20*k22*k26*k28*k31*k33*k106*x19*x24*x29*(k18 + k19)*(k15 +
k16)*(k30 + k85)*(c1*x33*k90*k36 + k35*k90 + k35*k37)*(k12 + k1
3)/k11/k13/k14/k16/k17/k29/k34/k36/k85/k90/x7/x12/x15/x27/x33/c1
/(k32 + k33)/(k27 + k28)/(k21 + k22)*x18 - 2/k34*k35/k36/k90*k91
/x33/c1*(k37 + k90)*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_
Z^4) + (k68 + k107)*(4*k11*k33*k35*k44*k47*k51*k59*k61*k63*k13*k
85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k47*
k51*k57*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4
*k11*k33*k35*k44*k47*k51*k57*k61*k13*k64*k85*k90*k92*k93*k94*k11
5*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k47*k51*k57*k61*k13*k64*k85*
k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k47*k
51*k57*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*
k11*k33*k35*k44*k47*k50*k59*k61*k13*k64*k85*k90*k92*k93*k94*k115
*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k47*k50*k59*k61*k13*k64*k85
*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k47*k5
0*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k
11*k33*k35*k44*k47*k50*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*
x27*x33*k27*k29 + 4*k11*k33*k35*k44*k47*k50*k57*k61*k13*k64*k85*
k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k47*k50
*k57*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k1
1*k33*k35*k44*k47*k50*k57*k61*k63*k13*k85*k90*k92*k93*k94*k115*x
27*x33*k28*k29 + 4*k11*k33*k35*k44*k47*k50*k57*k61*k63*k13*k85*k

```

[illegible]

15*x27*x33*k28*k29 + 4*k11*k33*k35*k37*k44*k47*k51*k59*k61*k63*k
13*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k35*k37*k44*
k47*k51*k57*k61*k13*k64*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4
*k11*k33*k35*k37*k44*k47*k51*k57*k61*k13*k64*k85*k92*k93*k94*k11
5*x27*x33*k27*k29 + 4*k11*k33*k35*k37*k44*k47*k51*k57*k61*k63*k1
3*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k35*k37*k44*k
47*k51*k57*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*
k11*k33*k35*k37*k44*k47*k50*k59*k61*k13*k64*k85*k92*k93*k94*k115
*x27*x33*k28*k29 + 4*k11*k33*k35*k37*k44*k47*k50*k59*k61*k13*k64
*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k35*k37*k44*k4
7*k50*k59*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k
11*k33*k35*k37*k44*k47*k50*k59*k61*k63*k13*k85*k92*k93*k94*k115*
x27*x33*k27*k29 + 4*k11*k33*k35*k37*k44*k47*k50*k57*k61*k13*k64*
k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k35*k37*k44*k47
*k50*k57*k61*k13*k64*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k1
1*k33*k35*k37*k44*k47*k50*k57*k61*k63*k13*k85*k92*k93*k94*k115*x
27*x33*k28*k29 + 4*k11*k33*k35*k37*k44*k47*k50*k57*k61*k63*k13*k
85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k46*k48*k51*
k59*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11
*k32*k35*k46*k48*k51*k59*k61*k13*k64*k85*k90*k92*k93*k94*k115*x2
7*x39*k27*k29 + 4*k11*k32*k35*k46*k48*k51*k59*k61*k63*k13*k85*k9
0*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k46*k48*k51*k
59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*
k32*k35*k46*k48*k51*k57*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27
*x39*k28*k29 + 4*k11*k32*k35*k46*k48*k51*k57*k61*k13*k64*k85*k90
*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k46*k48*k51*k5
7*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k
32*k35*k46*k48*k51*k57*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*
x39*k27*k29 + 4*k11*k32*k35*k46*k48*k50*k59*k61*k13*k64*k85*k90*
k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k46*k48*k50*k59
*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k3
2*k35*k46*k48*k50*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x
39*k28*k29 + 4*k11*k32*k35*k46*k48*k50*k59*k61*k63*k13*k85*k90*k
92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k46*k48*k50*k57*
k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32
*k35*k46*k48*k50*k57*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x3
9*k27*k29 + 4*k11*k32*k35*k46*k48*k50*k57*k61*k63*k13*k85*k90*k9
2*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k46*k48*k50*k57*k
61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*
k35*k45*k46*k48*k51*k59*k61*k13*k64*k85*k90*k93*k94*k115*x27*x39
*k28*k29 + 4*k11*k32*k35*k45*k46*k48*k51*k59*k61*k13*k64*k85*k90
*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k45*k46*k48*k51*k5
9*k61*k63*k13*k85*k90*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k
35*k45*k46*k48*k51*k59*k61*k63*k13*k85*k90*k93*k94*k115*x27*x39*
k27*k29 + 4*k11*k32*k35*k45*k46*k48*k51*k57*k61*k13*k64*k85*k90*
k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k45*k46*k48*k51*k57
*k61*k13*k64*k85*k90*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k3
5*k45*k46*k48*k51*k57*k61*k63*k13*k85*k90*k93*k94*k115*x27*x39*k
28*k29 + 4*k11*k32*k35*k45*k46*k48*k51*k57*k61*k63*k13*k85*k90*k
93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k46*k48*k51*k59*k61*
k13*k64*k85*k90*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35
*k46*k48*k51*k59*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x39*k2
7*k29 + 4*k11*k33*k35*k46*k48*k51*k59*k61*k63*k13*k85*k90*k92*k9
3*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k46*k48*k51*k59*k61*k
63*k13*k85*k90*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*
k46*k48*k51*k57*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x39*k28
*k29 + 4*k11*k33*k35*k46*k48*k51*k57*k61*k13*k64*k85*k90*k92*k93
*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k46*k48*k51*k57*k61*k6
3*k13*k85*k90*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k
46*k48*k51*k57*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x39*k27*
k29 + 4*k11*k33*k35*k46*k48*k50*k59*k61*k13*k64*k85*k90*k92*k93*
k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k45*k46*k48*k50*k59*k61
*k13*k64*k85*k90*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k4
5*k46*k48*k50*k59*k61*k13*k64*k85*k90*k93*k94*k115*x27*x39*k27*k
29 + 4*k11*k32*k35*k45*k46*k48*k50*k59*k61*k63*k13*k85*k90*k93*k
94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k45*k46*k48*k50*k59*k61*
k63*k13*k85*k90*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k45
*k46*k48*k50*k57*k61*k13*k64*k85*k90*k93*k94*k115*x27*x39*k28*k2

9 + 4*k11*k32*k35*k45*k46*k48*k50*k57*k61*k13*k64*k85*k90*k93*k9
4*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k45*k46*k48*k50*k57*k61*k
63*k13*k85*k90*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k45*
k46*k48*k50*k57*k61*k63*k13*k85*k90*k93*k94*k115*x27*x39*k27*k29
+ 4*k11*k32*k35*k44*k48*k51*k59*k61*k13*k64*k85*k90*k92*k93*k94
*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k44*k48*k51*k59*k61*k13*k6
4*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k44*k
48*k51*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29
+ 4*k11*k32*k35*k44*k48*k51*k59*k61*k63*k13*k85*k90*k92*k93*k94*
k115*x27*x33*k27*k29 + 4*k11*k32*k35*k44*k48*k51*k57*k61*k13*k64
*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k44*k4
8*k51*k57*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 +
4*k11*k32*k35*k44*k48*k51*k57*k61*k63*k13*k85*k90*k92*k93*k94*k
115*x27*x33*k28*k29 + 4*k11*k32*k35*k44*k48*k51*k57*k61*k63*k13*
k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k44*k48
*k50*k59*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 +
4*k11*k32*k35*k44*k48*k50*k59*k61*k13*k64*k85*k90*k92*k93*k94*k1
15*x27*x33*k27*k29 + 4*k11*k32*k35*k44*k48*k50*k59*k61*k63*k13*k
85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k44*k48*
k50*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4
*k11*k32*k35*k44*k48*k50*k57*k61*k13*k64*k85*k90*k92*k93*k94*k11
5*x27*x33*k28*k29 + 4*k11*k32*k35*k44*k48*k50*k57*k61*k13*k64*k8
5*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k44*k48*k
50*k57*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*
k11*k32*k35*k44*k48*k50*k57*k61*k63*k13*k85*k90*k92*k93*k94*k115
*x27*x33*k27*k29 + 4*k11*k32*k35*k44*k47*k51*k59*k61*k13*k64*k85
*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k44*k47*k5
1*k59*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k
11*k32*k35*k44*k47*k51*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*
x27*x33*k28*k29 + 4*k11*k32*k35*k44*k47*k51*k59*k61*k63*k13*k85*
k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k44*k47*k51
*k57*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k1
1*k32*k35*k44*k47*k51*k57*k61*k13*k64*k85*k90*k92*k93*k94*k115*x
27*x33*k27*k29 + 4*k11*k32*k35*k44*k47*k51*k57*k61*k63*k13*k85*k
90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k44*k47*k51*
k57*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11
*k32*k35*k44*k47*k50*k59*k61*k13*k64*k85*k90*k92*k93*k94*k115*x2
7*x33*k28*k29 + 4*k11*k32*k35*k44*k47*k50*k59*k61*k13*k64*k85*k
90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k44*k47*k50*k
59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*
k32*k35*k44*k47*k50*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27
*x33*k27*k29 + 4*k11*k32*k35*k44*k47*k50*k57*k61*k13*k64*k85*k90
*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k44*k47*k50*k5
7*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k
32*k35*k44*k47*k50*k57*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*
x33*k28*k29 + 4*k11*k32*k35*k44*k47*k50*k57*k61*k63*k13*k85*k90*
k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k46*k48*k51
*k59*k61*k13*k64*k85*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k3
2*k35*k37*k46*k48*k51*k59*k61*k13*k64*k85*k92*k93*k94*k115*x27*x
39*k27*k29 + 4*k11*k32*k35*k37*k46*k48*k51*k59*k61*k63*k13*k85*k
92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k37*k46*k48*k51*
k59*k61*k63*k13*k85*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32
*k35*k37*k46*k48*k51*k57*k61*k13*k64*k85*k92*k93*k94*k115*x27*x3
9*k28*k29 + 4*k11*k32*k35*k37*k46*k48*k51*k57*k61*k13*k64*k85*k9
2*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k37*k46*k48*k51*k
57*k61*k63*k13*k85*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*
k35*k37*k46*k48*k51*k57*k61*k63*k13*k85*k92*k93*k94*k115*x27*x39
*k27*k29 + 4*k11*k32*k35*k37*k46*k48*k50*k59*k61*k13*k64*k85*k92
*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k37*k46*k48*k50*k5
9*k61*k13*k64*k85*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k
35*k37*k46*k48*k50*k59*k61*k63*k13*k85*k92*k93*k94*k115*x27*x39*
k28*k29 + 4*k11*k32*k35*k37*k46*k48*k50*k59*k61*k63*k13*k85*k92*
k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k37*k46*k48*k50*k57
*k61*k13*k64*k85*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k3
5*k37*k46*k48*k50*k57*k61*k13*k64*k85*k92*k93*k94*k115*x27*x39*k
27*k29 + 4*k11*k32*k35*k37*k46*k48*k50*k57*k61*k63*k13*k85*k92*k
93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k37*k46*k48*k50*k57*
k61*k63*k13*k85*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35

*k37*k45*k46*k48*k51*k59*k61*k13*k64*k85*k93*k94*k115*x27*x39*k2
8*k29 + 4*k11*k32*k35*k37*k45*k46*k48*k51*k59*k61*k13*k64*k85*k9
3*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k37*k45*k46*k48*k51*k
59*k61*k63*k13*k85*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*
k37*k45*k46*k48*k51*k59*k61*k63*k13*k85*k93*k94*k115*x27*x39*k27
*k29 + 4*k11*k32*k35*k37*k45*k46*k48*k51*k57*k61*k13*k64*k85*k93
*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k37*k45*k46*k48*k51*k5
7*k61*k13*k64*k85*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k
37*k45*k46*k48*k51*k57*k61*k63*k13*k85*k93*k94*k115*x27*x39*k28*
k29 + 4*k11*k32*k35*k37*k45*k46*k48*k51*k57*k61*k63*k13*k85*k93*
k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k37*k45*k46*k48*k50*k59
*k61*k13*k64*k85*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k3
7*k45*k46*k48*k50*k59*k61*k13*k64*k85*k93*k94*k115*x27*x39*k27*k
29 + 4*k11*k32*k35*k37*k45*k46*k48*k51*k59*k61*k63*k13*k85*k93*k
94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k37*k45*k46*k48*k50*k59*
k61*k63*k13*k85*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k37
*k45*k46*k48*k50*k57*k61*k13*k64*k85*k93*k94*k115*x27*x39*k28*k2
9 + 4*k11*k32*k35*k37*k45*k46*k48*k50*k57*k61*k13*k64*k85*k93*k9
4*k115*x27*x39*k27*k29 + 4*k11*k32*k35*k37*k45*k46*k48*k50*k57*k
61*k63*k13*k85*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k35*k37*
k45*k46*k48*k50*k57*k61*k63*k13*k85*k93*k94*k115*x27*x39*k27*k29
+ 4*k11*k32*k35*k37*k44*k48*k51*k59*k61*k13*k64*k85*k92*k93*k94
*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k48*k51*k59*k61*k1
3*k64*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k
44*k48*k51*k59*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*k28*k29
+ 4*k11*k32*k35*k37*k44*k48*k51*k59*k61*k63*k13*k85*k92*k93*k94*
k115*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k48*k51*k57*k61*k13
*k64*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k4
4*k48*k51*k57*k61*k13*k64*k85*k92*k93*k94*k115*x27*x33*k27*k29 +
4*k11*k32*k35*k37*k44*k48*k51*k57*k61*k63*k13*k85*k92*k93*k94*k
115*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k48*k51*k57*k61*k63*
k13*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k44
*k48*k50*k59*k61*k13*k64*k85*k92*k93*k94*k115*x27*x33*k28*k29 +
4*k11*k32*k35*k37*k44*k48*k50*k59*k61*k13*k64*k85*k92*k93*k94*k1
15*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k48*k50*k59*k61*k63*k
13*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*
k48*k50*k59*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4
*k11*k32*k35*k37*k44*k48*k50*k57*k61*k13*k64*k85*k92*k93*k94*k11
5*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k48*k50*k57*k61*k13*k6
4*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k
48*k50*k57*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*
k11*k32*k35*k37*k44*k48*k50*k57*k61*k63*k13*k85*k92*k93*k94*k115
*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k47*k51*k59*k61*k13*k64
*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k
7*k51*k59*k61*k13*k64*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k
11*k32*k35*k37*k44*k47*k51*k59*k61*k63*k13*k85*k92*k93*k94*k115*
x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k47*k51*k59*k61*k63*k13*
k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k47
*k51*k57*k61*k13*k64*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k1
1*k32*k35*k37*k44*k47*k51*k57*k61*k13*k64*k85*k92*k93*k94*k115*x
27*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k47*k51*k57*k61*k63*k13*k
85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k47*
k51*k57*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11
*k32*k35*k37*k44*k47*k50*k59*k61*k13*k64*k85*k92*k93*k94*k115*x2
7*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k47*k50*k59*k61*k13*k64*k8
5*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k47*k
50*k59*k61*k63*k13*k85*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*
k32*k35*k37*k44*k47*k50*k59*k61*k63*k13*k85*k92*k93*k94*k115*x27
*x33*k27*k29 + 4*k11*k32*k35*k37*k44*k47*k50*k57*k61*k13*k64*k85
*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k35*k37*k44*k47*k5
0*k57*k61*k13*k64*k85*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k
32*k35*k37*k44*k47*k50*k57*k61*k63*k13*k85*k92*k93*k94*k115*x27*
x33*k28*k29 + 4*k11*k32*k35*k37*k44*k47*k50*k57*k61*k63*k13*k85*
k92*k93*k94*k115*x27*x33*k27*k29 + k33*k35*k46*k48*k49*k51*k57*k
58*k60*k62*k13*k64*k90*k92*x24*k26*x29*x39*x42*x49*x52*c1*k28*k3
0*k31 + k33*k35*k46*k48*k49*k51*k57*k58*k60*k62*k13*k64*k85*k90*
k92*x24*k26*x29*x39*x42*x49*x52*c1*k28*k31 + k33*k35*k46*k48*k12
*k49*k51*k57*k58*k60*k62*k64*k90*k92*x24*k26*x29*x39*x42*x49*x52

*c1*k28*k30*k31 + k33*k35*k46*k48*k12*k49*k51*k57*k58*k60*k62*k6
4*k85*k90*k92*x24*k26*x29*x39*x42*x49*x52*c1*k28*k31 + k33*k35*k
45*k46*k48*k49*k51*k57*k58*k60*k62*k13*k64*k90*x24*k26*x29*x39*x
42*x49*x52*c1*k28*k30*k31 + k33*k35*k45*k46*k48*k49*k51*k57*k58*
k60*k62*k13*k64*k85*k90*x24*k26*x29*x39*x42*x49*x52*c1*k28*k31 +
k33*k35*k45*k46*k48*k12*k49*k51*k57*k58*k60*k62*k64*k90*x24*k26
*x29*x39*x42*x49*x52*c1*k28*k30*k31 + k33*k35*k45*k46*k48*k12*k4
9*k51*k57*k58*k60*k62*k64*k85*k90*x24*k26*x29*x39*x42*x49*x52*c1
*k28*k31 + k33*k35*k37*k46*k48*k49*k51*k57*k58*k60*k62*k13*k64*k
92*x24*k26*x29*x39*x42*x49*x52*c1*k28*k30*k31 + k33*k35*k37*k46*
k48*k49*k51*k57*k58*k60*k62*k13*k64*k85*k92*x24*k26*x29*x39*x42*
x49*x52*c1*k28*k31 + k33*k35*k37*k46*k48*k12*k49*k51*k57*k58*k60
*k62*k64*k92*x24*k26*x29*x39*x42*x49*x52*c1*k28*k30*k31 + k33*k3
5*k37*k46*k48*k12*k49*k51*k57*k58*k60*k62*k64*k85*k92*x24*k26*x2
9*x39*x42*x49*x52*c1*k28*k31 + k33*k35*k37*k45*k46*k48*k49*k51*k
57*k58*k60*k62*k13*k64*x24*k26*x29*x39*x42*x49*x52*c1*k28*k30*k3
1 + k33*k35*k37*k45*k46*k48*k49*k51*k57*k58*k60*k62*k13*k64*k85*
x24*k26*x29*x39*x42*x49*x52*c1*k28*k31 + k33*k35*k37*k45*k46*k48
*k12*k49*k51*k57*k58*k60*k62*k64*x24*k26*x29*x39*x42*x49*x52*c1*
k28*k30*k31 + k33*k35*k37*k45*k46*k48*k12*k49*k51*k57*k58*k60*k6
2*k64*k85*x24*k26*x29*x39*x42*x49*x52*c1*k28*k31 + k33*k36*k46*k
48*k49*k51*k57*k58*k60*k62*k13*k64*k90*k92*x24*k26*x29*x33*x39*x
42*x49*x52*c1^2*k28*k30*k31 + k33*k36*k46*k48*k49*k51*k57*k58*k6
0*k62*k13*k64*k85*k90*k92*x24*k26*x29*x33*x39*x42*x49*x52*c1^2*k
28*k31 + k33*k36*k46*k48*k12*k49*k51*k57*k58*k60*k62*k64*k90*k92
*x24*k26*x29*x33*x39*x42*x49*x52*c1^2*k28*k30*k31 + k33*k36*k46*
k48*k12*k49*k51*k57*k58*k60*k62*k64*k85*k90*k92*x24*k26*x29*x33*
x39*x42*x49*x52*c1^2*k28*k31 + k33*k36*k45*k46*k48*k49*k51*k57*k
58*k60*k62*k13*k64*k90*x24*k26*x29*x33*x39*x42*x49*x52*c1^2*k28*
k30*k31 + k33*k36*k45*k46*k48*k49*k51*k57*k58*k60*k62*k13*k64*k8
5*k90*x24*k26*x29*x33*x39*x42*x49*x52*c1^2*k28*k31 + k33*k36*k45
*k46*k48*k12*k49*k51*k57*k58*k60*k62*k64*k90*x24*k26*x29*x33*x39
*x42*x49*x52*c1^2*k28*k30*k31 + k33*k36*k45*k46*k48*k12*k49*k51*
k57*k58*k60*k62*k64*k85*k90*x24*k26*x29*x33*x39*x42*x49*x52*c1^2
*k28*k31 + 4*k11*k33*k35*k46*k48*k50*k59*k61*k13*k64*k85*k90*k92
*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k46*k48*k50*k59*k6
1*k63*k13*k85*k90*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k
35*k46*k48*k50*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x39*
k27*k29 + 4*k11*k33*k35*k46*k48*k50*k57*k61*k13*k64*k85*k90*k92*
k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k46*k48*k50*k57*k61
*k13*k64*k85*k90*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k3
5*k46*k48*k50*k57*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x39*k
28*k29 + 4*k11*k33*k35*k46*k48*k50*k57*k61*k63*k13*k85*k90*k92*k
93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k45*k46*k48*k51*k59*
k61*k13*k64*k85*k90*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35
*k45*k46*k48*k51*k59*k61*k13*k64*k85*k90*k93*k94*k115*x27*x39*k2
7*k29 + 4*k11*k33*k35*k45*k46*k48*k51*k59*k61*k63*k13*k85*k90*k9
3*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k45*k46*k48*k51*k59*k
61*k63*k13*k85*k90*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*
k45*k46*k48*k51*k57*k61*k13*k64*k85*k90*k93*k94*k115*x27*x39*k28
*k29 + 4*k11*k33*k35*k45*k46*k48*k51*k57*k61*k13*k64*k85*k90*k93
*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k45*k46*k48*k51*k57*k6
1*k63*k13*k85*k90*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k
45*k46*k48*k51*k57*k61*k63*k13*k85*k90*k93*k94*k115*x27*x39*k27*
k29 + 4*k11*k33*k35*k45*k46*k48*k50*k57*k61*k13*k64*k85*k90*k93*
k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k45*k46*k48*k50*k59*k93*
k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k45*k46*k48*k50*k59*k61
*k13*k64*k85*k90*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k4
5*k46*k48*k50*k59*k61*k63*k13*k85*k90*k93*k94*k115*x27*x39*k28*k
29 + 4*k11*k33*k35*k45*k46*k48*k50*k59*k61*k63*k13*k85*k90*k93*k
94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k45*k46*k48*k50*k57*k61*
k13*k64*k85*k90*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k45
*k46*k48*k50*k57*k61*k13*k64*k85*k90*k93*k94*k115*x27*x39*k27*k2
9 + 4*k11*k33*k35*k45*k46*k48*k50*k57*k61*k63*k13*k85*k90*k93*k9
4*k115*x27*x39*k28*k29 + 4*k11*k33*k35*k45*k46*k48*k50*k57*k61*k
63*k13*k85*k90*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k35*k44*
k48*k51*k59*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29
+ 4*k11*k33*k35*k44*k48*k51*k59*k61*k13*k64*k85*k90*k92*k93*k94
*k115*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k48*k51*k59*k61*k63*k1

```

3*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k
48*k51*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29
+ 4*k11*k33*k35*k44*k48*k51*k57*k61*k13*k64*k85*k90*k92*k93*k94*
k115*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k48*k51*k57*k61*k13*k64
*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k4
8*k51*k57*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 +
4*k11*k33*k35*k44*k48*k51*k57*k61*k63*k13*k85*k90*k92*k93*k94*k
115*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k48*k50*k59*k61*k13*k64*
k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k48
*k50*k59*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 +
4*k11*k33*k35*k44*k48*k50*k59*k61*k63*k13*k85*k90*k92*k93*k94*k1
15*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k48*k50*k59*k61*k63*k13*k
85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k48*
k50*k57*k61*k13*k64*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4
*k11*k33*k35*k44*k48*k50*k57*k61*k13*k64*k85*k90*k92*k93*k94*k11
5*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k48*k50*k57*k61*k63*k13*k8
5*k90*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k48*k
50*k57*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*
k11*k33*k35*k44*k47*k51*k59*k61*k13*k64*k85*k90*k92*k93*k94*k115
*x27*x33*k28*k29 + 4*k11*k33*k35*k44*k47*k51*k59*k61*k13*k64*k85
*k90*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k35*k44*k47*k5
1*k59*k61*k63*k13*k85*k90*k92*k93*k94*k115*x27*x33*k28*k29)/c1^2
/k60/x52/k57/k58/x49/k51/k49/x42/k48/k46/x39/k67/x19/k13/k11/k29
/x27/k85/k90/(k63 + k64)/(k32 + k33)/(k27 + k28)/(k45 + k92)/k36
/x33/k34*b1/b2)

vbar[ 35] = k35*(k20*k22*k26*k28*k31*k33*k106*x19*x24*x29*(k30 + k85)*(k18 +
k19)*(k15 + k16)*(k12 + k13)*(k37 + k90)/k11/k13/k14/k16/k17/k2
9/k36/k85/k90/x7/x12/x15/x27/x33/c1/(k32 + k33)/(k27 + k28)/(k21
+ k22)*x18 - 2/k36/k90*k91/x33/c1*(k37 + k90)*RootOf(a1 + a2*_Z
+ a3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (k68 + k107)*(4*k11*k33*k44*k4
7*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k
11*k33*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*
k27*k29 + k33*k46*k48*k49*k51*k57*k58*k60*k62*k64*k13*k92*x24*x2
9*x39*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k46*k48*k49*k51*k57*k
58*k60*k62*k64*k85*k13*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28*k3
1 + k33*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*k92*x24*x29*x39*
k26*x42*x49*x52*c1*k28*k30*k31 + 4*k11*k32*k44*k48*k50*k57*k61*k
63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*
k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11
*k32*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k2
8*k29 + 4*k11*k32*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k1
15*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k51*k59*k61*k63*k85*k13*k
92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k51*k59*k61*
k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k47
*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k1
1*k32*k44*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k
27*k29 + 4*k11*k32*k46*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k
115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k57*k61*k64*k85*k13*
k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k51*k57*k61
*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k4
8*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k
11*k32*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*
k28*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*
k115*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k63*k85*k13
*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k50*k59*k6
1*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k
48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*
k11*k32*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39
*k27*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94
*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k59*k61*k64*k85*k1
3*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k50*k
57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*
k46*k48*k50*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4
*k11*k32*k45*k46*k48*k50*k57*k61*k63*k85*k13*k93*k94*k115*x27*x3
9*k28*k29 + 4*k11*k32*k45*k46*k48*k50*k57*k61*k63*k85*k13*k93*k9
4*k115*x27*x39*k27*k29 + 4*k11*k32*k44*k48*k51*k59*k61*k64*k85*k
13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k51*k59*

```

205

```

x33*k27*k29 + 4*k11*k32*k44*k48*k50*k59*k61*k63*k85*k13*k92*k93*
k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k50*k59*k61*k63*k85
*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k46*k48*k50*k5
7*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k
46*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29
+ 4*k11*k32*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*k115*x27
*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93
*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k44*k47*k50*k57*k61*k63*k8
5*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k50*k
57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*
k46*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29
+ 4*k11*k32*k46*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x2
7*x39*k27*k29 + 4*k11*k32*k46*k48*k51*k59*k61*k63*k85*k13*k92*k9
3*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k59*k61*k63*k
85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k44*k47*k51*
k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32
*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k2
9 + 4*k11*k32*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x
27*x33*k28*k29 + 4*k11*k32*k44*k47*k50*k59*k61*k64*k85*k13*k92*k
93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k45*k46*k48*k51*k59*k61*
k63*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48
*k51*k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k3
2*k45*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k
29 + 4*k11*k32*k45*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k115*
x27*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k51*k57*k61*k63*k85*k13*
k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k51*k57*k61
*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k44*k48*k5
1*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k
33*k44*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*
k29 + 4*k11*k33*k44*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115
*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k50*k59*k61*k64*k85*k13*k92
*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k50*k59*k61*k6
3*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k
50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*
k33*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28
*k29 + 4*k11*k33*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k11
5*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k50*k57*k61*k63*k85*k13*k9
2*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k50*k57*k61*k
63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k47*
k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11
*k33*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k2
7*k29 + 4*k11*k33*k44*k47*k51*k59*k61*k63*k85*k13*k92*k93*k94*k1
15*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k51*k59*k61*k63*k85*k13*k
92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k50*k59*k61*
k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47
*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k1
1*k32*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k
28*k29 + 4*k11*k32*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k94*k
115*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k50*k57*k61*k63*k85*k13*
k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k50*k57*k61
*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k45*k4
6*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k
11*k32*k45*k46*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*
k27*k29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k63*k85*k13*k93*k94*
k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k63*k85
*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k44*k47*k51*k57*k6
1*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k
47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*
k11*k33*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33
*k28*k29 + 4*k11*k33*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94
*k115*x27*x33*k27*k29)*(k37 + k90)/x33/k36/(k63 + k64)/(k45 + k9
2)/(k32 + k33)/(k27 + k28)/k90/k85/x27/k29/k11/k13/x19/k67/x39/k
46/k48/x42/k49/k51/x49/k58/k57/x52/k60/c1^2*b1/b2)

```

```

vbar[ 36] = k36*c1*(k20*k22*k26*k28*k31*k33*k106*x19*x24*x29*(k30 + k85)*(k1
8 + k19)*(k15 + k16)*(k12 + k13)*(k37 + k90)/k11/k13/k14/k16/k17
/k29/k36/k85/k90/x7/x12/x15/x27/x33/c1/(k32 + k33)/(k27 + k28)/(
k21 + k22)*x18 - 2/k36/k90*k91/x33/c1*(k37 + k90)*RootOf(a1 + a2

```

```

*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (k68 + k107)*(4*k11*k33*k44
*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 +
4*k11*k33*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x
33*k27*k29 + k33*k46*k48*k49*k51*k57*k58*k60*k62*k64*k13*k92*x24
*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k46*k48*k49*k51*k5
7*k58*k60*k62*k64*k85*k13*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28
*k31 + k33*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*k92*x24*x29*x
39*k26*x42*x49*x52*c1*k28*k30*k31 + 4*k11*k32*k44*k48*k50*k57*k6
1*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k
48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*
k11*k32*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33
*k28*k29 + 4*k11*k32*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94
*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k51*k59*k61*k63*k85*k1
3*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k51*k59*k
61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*
k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4
*k11*k32*k44*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x3
3*k27*k29 + 4*k11*k32*k46*k48*k51*k57*k61*k64*k85*k13*k92*k93*k9
4*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k57*k61*k64*k85*k
13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k51*k57*
k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46
*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 +
4*k11*k32*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x
39*k28*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93*k
94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k63*k85*
k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k50*k59
*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k4
6*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 +
4*k11*k32*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*
x39*k27*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k64*k85*k13*k92*k93*
k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k64*k85
*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k5
0*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k
45*k46*k48*k50*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29
+ 4*k11*k32*k45*k46*k48*k50*k57*k61*k63*k85*k13*k93*k94*k115*x27
*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k50*k57*k61*k63*k85*k13*k93
*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k44*k48*k51*k59*k61*k64*k8
5*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k51*k
59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + k33*k45*k4
6*k48*k49*k51*k57*k58*k60*k62*k64*k13*x24*x29*x39*k26*x42*x49*x5
2*c1*k28*k30*k31 + k33*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*k
85*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28*k31 + k33*k45*k46*k48*
k49*k51*k57*k58*k60*k62*k64*k85*x24*x29*x39*k26*x42*x49*x52*c1*k28
*k31 + k33*k45*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*k85*x24
*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k45*k46*k48*k49*k5
1*k12*k57*k58*k60*k62*k64*k85*x24*x29*x39*k26*x42*x49*x52*c1*k28
*k31 + 4*k11*k33*k44*k47*k50*k59*k61*k63*k85*k13*k92*k93*k94*k11
5*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k50*k59*k61*k63*k85*k13*k9
2*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k47*k50*k57*k61*k
64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k47*
k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11
*k33*k44*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k2
8*k29 + 4*k11*k33*k44*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k1
15*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k51*k59*k61*k63*k85*k13*k
92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k51*k59*k61*
k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k48
*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k1
1*k33*k44*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k
27*k29 + 4*k11*k32*k44*k48*k51*k59*k61*k63*k85*k13*k92*k93*k94*k
115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k51*k59*k61*k63*k85*k13*
k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k48*k51*k57*k61
*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k4
8*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k
11*k33*k46*k48*k51*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*
k28*k29 + 4*k11*k33*k45*k46*k48*k51*k59*k61*k63*k85*k13*k93*k94*
k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*k59*k61*k63*k85
*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k51*k5
7*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k

```



```

115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k50*k59*k61*k64*k85*k13*
k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k50*k59*k61
*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k4
8*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k
11*k33*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*
k28*k29 + 4*k11*k33*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*
k115*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k50*k57*k61*k63*k85*k13
*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k50*k57*k6
1*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k
47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*
k11*k33*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33
*k27*k29 + 4*k11*k33*k44*k47*k51*k59*k61*k63*k85*k13*k92*k93*k94
*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k51*k59*k61*k63*k85*k1
3*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k50*k59*k
61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*
k47*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4
*k11*k32*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x3
3*k28*k29 + 4*k11*k32*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k9
4*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k50*k57*k61*k63*k85*k
13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k50*k57*
k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k45
*k46*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 +
4*k11*k32*k45*k46*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x
39*k27*k29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k63*k85*k13*k93*k
94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k63*
k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k44*k47*k51*k57
*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k4
4*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 +
4*k11*k33*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*
x33*k28*k29 + 4*k11*k33*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*
k94*k115*x27*x33*k27*k29)*(k37 + k90)/x33/k36/(k63 + k64)/(k45 +
k92)/(k32 + k33)/(k27 + k28)/k90/k85/x27/k29/k11/k13/x19/k67/x3
9/k46/k48/x42/k49/k51/x49/k58/k57/x52/k60/c1^2*b1/b2)*x33

```

```

vbar[ 37] = k37*((k12 + k13)*(k30 + k85)*(k15 + k16)*(k18 + k19)*x29*x24*x19
*k106*k33*k31*k28*k26*k22*k20/k11/k13/k14/k16/k17/k29/k85/k90/x7
/x12/x15/x27/(k32 + k33)/(k27 + k28)/(k21 + k22)*x18 - 2/k90*k91
*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (k68 + k107)
*(4*k11*k33*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27
*x33*k28*k29 + 4*k11*k33*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93
*k94*k115*x27*x33*k27*k29 + k33*k46*k48*k49*k51*k57*k58*k60*k62*
k64*k13*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k46
*k48*k49*k51*k57*k58*k60*k62*k64*k85*k13*k92*x24*x29*x39*k26*x42
*x49*x52*c1*k28*k31 + k33*k46*k48*k49*k51*k12*k57*k58*k60*k62*k6
4*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + 4*k11*k32*k44
*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 +
4*k11*k32*k44*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x
33*k27*k29 + 4*k11*k32*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k
94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k51*k59*k61*k64*k85*
k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k51*k59
*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k4
4*k47*k51*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 +
4*k11*k32*k44*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*
x33*k28*k29 + 4*k11*k32*k44*k47*k51*k57*k61*k64*k85*k13*k92*k93*
k94*k115*x27*x33*k27*k29 + 4*k11*k32*k46*k48*k51*k57*k61*k64*k85
*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k5
7*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k
46*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29
+ 4*k11*k32*k46*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27
*x39*k27*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93
*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k64*k8
5*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k50*k
59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*
k46*k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29
+ 4*k11*k32*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x2
7*x39*k28*k29 + 4*k11*k32*k46*k48*k50*k57*k61*k64*k85*k13*k92*k9
3*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k64*k
85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k51*

```

k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32
*k45*k46*k48*k50*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k2
9 + 4*k11*k32*k45*k46*k48*k50*k57*k61*k64*k85*k13*k93*k94*k115*x
27*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k50*k57*k61*k63*k85*k13*k
93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k50*k57*k61*k
63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k44*k48*k51
*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k3
2*k44*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k
29 + k33*k45*k46*k48*k49*k51*k57*k58*k60*k62*k64*k13*x24*x29*x39
*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k46*k48*k49*k51*k12*k57*k5
8*k60*k62*k64*k85*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28*k31 + k
33*k45*k46*k48*k49*k51*k57*k58*k60*k62*k64*k85*k13*x24*x29*x39*k
26*x42*x49*x52*c1*k28*k31 + k33*k45*k46*k48*k49*k51*k12*k57*k58*
k60*k62*k64*x24*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k45
*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*k85*x24*x29*x39*k26*x42
*x49*x52*c1*k28*k31 + 4*k11*k33*k44*k47*k50*k59*k61*k63*k85*k13*
k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k50*k59*k61
*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k4
7*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k
11*k33*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*
k27*k29 + 4*k11*k33*k44*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*
k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k51*k59*k61*k64*k85*k13
*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k51*k59*k6
1*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k
48*k51*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*
k11*k33*k44*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33
*k28*k29 + 4*k11*k33*k44*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94
*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k48*k51*k59*k61*k63*k85*k1
3*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k51*k59*k
61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*
k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4
*k11*k32*k44*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x3
3*k27*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k63*k85*k13*k92*k93*k9
4*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*k59*k61*k63*k
85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*
k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45
*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 +
4*k11*k33*k45*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k115*x27*x
39*k27*k29 + 4*k11*k33*k45*k46*k48*k51*k57*k61*k63*k85*k13*k93*k
94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*k57*k61*k63*
k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k50
*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k4
5*k46*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29 +
4*k11*k33*k45*k46*k48*k50*k59*k61*k63*k85*k13*k93*k94*k115*x27*
x39*k28*k29 + 4*k11*k33*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*
k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k50*k57*k61*k64*k85
*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k5
7*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k
46*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29
+ 4*k11*k33*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*k115*x27
*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93
*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k50*k57*k61*k6
4*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k
50*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*
k45*k46*k48*k50*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29
+ 4*k11*k33*k45*k46*k48*k50*k57*k61*k63*k85*k13*k93*k94*k115*x2
7*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k50*k59*k61*k63*k85*k13*k9
3*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k63*k
85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k51*
k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33
*k46*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k2
9 + 4*k11*k33*k46*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x
27*x39*k28*k29 + 4*k11*k33*k46*k48*k51*k57*k61*k63*k85*k13*k92*k
93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k59*k61*k64*
k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k50
*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k3
3*k46*k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k
29 + 4*k11*k33*k46*k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*

211

```

/(k32 + k33)/(k27 + k28)/k90/k85/x27/k29/k11/k13/x19/k67/x39/k46
/k48/x42/k49/k51/x49/k58/k57/x52/k60/c1*b1/b2)

vbar[ 38] = k38*c1*((k41*k39 + c1*k40*x33*k91 + k91*k39)/c1/k38/x33/k40/c1*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)-2*k93*k115*k94*k61*(k57 + k59)*(k50 + k51)*(k68 + k107)*(k46*x39*k92*k48 + k46*x39*k45*k48 + x33*k44*k92*k48 + x33*k44*k92*k47)/c1/(k45 + k92)/k67/k60/x52/k57/k58/x49/k51/k49/x42/x19/k48/k46/x39/k38/c1*b1/b2)

vbar[ 39] = k39*(k41 + k91)/k40/c1/x33*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)

vbar[ 40] = (k41 + k91)*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)

vbar[ 41] = k41*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)

vbar[ 42] = -k93*k115*k94*k61*(k50 + k51)*(k68 + k107)*(k57 + k59)*(k46*c1*x39*k45*k48 + k43*k45*k48 + k44*x33*c1*k92*k48 + k46*c1*x39*k92*k48 + k44*x33*c1*k92*k47 + k43*k92*k48 + k43*k45*k47 + k43*k92*k47)/k46/k48/k49/k51/k57/k58/k60/k67/x19/x39/x42/x49/x52/c1^2/(k45 + k92)*b1/b2

vbar[ 43] = -k43*k93*k61*k94*k115*(k68 + k107)*(k57 + k59)*(k50 + k51)*(k47 + k48)/x39/k46/x42/k49/k51/x49/k58/k57/x52/k60/k67/x19/c1^2/k48*b1/b2

vbar[ 44] = -k44/c1*x33*k93*k61*k94*k115*(k68 + k107)*(k57 + k59)*(k50 + k51)*(k47 + k48)/x39/k46/x42/k49/k51/x49/k58/k57/x52/k60/k67/x19/k48*b1/b2

vbar[ 45] = -k45*k44*x33*(k47 + k48)*(k68 + k107)*(k57 + k59)*(k50 + k51)*k115*k94*k61*k93/k48/c1/x19/k67/k60/x52/k57/k58/x49/k51/k49/x42/k46/x39/(k45 + k92)*b1/b2

vbar[ 46] = -1/c1*k93*k61*k94*k115*(k68 + k107)*(k57 + k59)*(k50 + k51)*(k47 + k48)/x42/k49/k51/x49/k58/k57/x52/k60/k67/x19/k48*b1/b2

vbar[ 47] = -k47*(k68 + k107)*(k57 + k59)*(k50 + k51)*k115*k94*k61*k93/x42/k49/k51/x49/k58/k57/x52/k60/k67/x19/c1/k48*b1/b2

vbar[ 48] = -k93*(k68 + k107)*(k57 + k59)*(k50 + k51)*k115*k94*k61/c1/x19/k67/k60/x52/k57/k58/x49/k51/k49/x42*b1/b2

vbar[ 49] = -(k68 + k107)*(k57 + k59)*(k50 + k51)*k115*k94*k61/x19/k67/k60/x52/k57/k58/x49/k51*b1/b2

vbar[ 50] = -k50*k61*k94*k115*(k68 + k107)*(k57 + k59)/k67/x19/k60/x52/k57/k58/x49/k51*b1/b2

vbar[ 51] = -k61*k94*k115*(k68 + k107)*(k57 + k59)/x52/k60/k67/x19/k57/k58/x49*b1/b2

vbar[ 52] = -k52*(k68 + k107)*(k57 + k59)*(k50 + k51)*k115*k94*k61/x19/k67/k60/x52/k57/k58/x49/k51/k49/x42*b1/b2*x45

vbar[ 53] = -k53*k52*x45*k61*k94*k115*(k68 + k107)*(k57 + k59)*(k50 + k51)/x19/(k53 + k54)/k67/k60/x52/k57/k58/x49/k51/k49/x42*b1/b2

vbar[ 54] = -k52*k115*k94*k61*k54*(k68 + k107)*(k57 + k59)*(k50 + k51)*x45/x19/(k53 + k54)/k67/k60/x52/k57/k58/x49/k51/k49/x42*b1/b2

vbar[ 55] = -k61*k94*(k68 + k107)*(k57 + k59)*(k56 + k115)/k67/x19/k60/x52/k57/k58/x49*b1/b2

vbar[ 56] = -k56*k94*(k57 + k59)*(k68 + k107)*k61/x52/k60/k67/x19/k57/k58/x49*b1/b2

vbar[ 57] = -k94*(k68 + k107)*k61/x52/k60/k67/x19*b1/b2

```

```

vbar[ 58] = -k94*(k57 + k59)*(k68 + k107)*k61/x52/k60/k67/x19/k57*b1/b2
vbar[ 59] = -k59*k94*(k68 + k107)*k61/x52/k60/k67/x19/k57*b1/b2
vbar[ 60] = -k61*(k68 + k107)/k67/x19*b1/b2
vbar[ 61] = -k61*(k68 + k107)/k67/x19*b1/b2
vbar[ 62] = -k62*x12*(k68 + k107)/k67/x19*b1/b2
vbar[ 63] = -k63*k62*x12*(k68 + k107)/k67/x19/(k63 + k64)*b1/b2
vbar[ 64] = -k64*k62*x12*(k68 + k107)/k67/x19/(k63 + k64)*b1/b2
vbar[ 65] = -(k99*k100 + k66*k70 + k66*k100 + k99*k70 + k69*x19*k100)*k54*k5
2*x45*k61*k94*k115*(k68 + k107)*(k57 + k59)*(k50 + k51)/k67/k60/
x52/k57/k58/x49/k51/k49/x42/(k99*k100 + k99*k70 + k69*x19*k100)/
(k53 + k54)/x19*b1/b2
vbar[ 66] = -k66*(k70 + k100)*k54*k52*x45*k61*k94*k115*(k68 + k107)*(k57 + k
59)*(k50 + k51)/x19/(k53 + k54)/(k99*k100 + k99*k70 + k69*x19*k1
00)/x42/k49/k51/x49/k58/k57/x52/k60/k67*b1/b2
vbar[ 67] = -(k68 + k107)*b1/b2
vbar[ 68] = -k68*b1/b2
vbar[ 69] = -k69*(k70 + k100)*k54*k52*x45*k61*k94*k115*(k68 + k107)*(k57 + k
59)*(k50 + k51)/(k53 + k54)/(k99*k100 + k99*k70 + k69*x19*k100)/
x42/k49/k51/x49/k58/k57/x52/k60/k67*b1/b2
vbar[ 70] = -k70*k69*k54*k52*x45*k61*k94*k115*(k68 + k107)*(k57 + k59)*(k50
+ k51)/(k53 + k54)/(k99*k100 + k99*k70 + k69*x19*k100)/x42/k49/k
51/x49/k58/k57/x52/k60/k67*b1/b2
vbar[ 71] = k4*x5*k75*(k7 + k8)*(-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22
- k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k
16*k18*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10
*k21 + k80*k9*x10*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*
k16*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x
19 + k80*k9*x10*k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k1
5*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19
+ k80*k9*x10*k12*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16
*k17*x7*x12*x15*k80*k21)/(k5 + k75)/k6/k11/k13/k14/k16/k17/x7^2/
x12/x15/(k21 + k22)/k8/(k10 + k80)*x18 + (k68 + k107)*(k12 + k13
)*(k7 + k8)*k4*x5*k75*k80*k9*x10*k62*k64/x7/(k5 + k75)/k6/k11/k1
3/k67/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2 + k72*x2
vbar[ 72] = k72*x2
vbar[ 73] = k4*x5*k75*(k7 + k8)*(-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22
- k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k
16*k18*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10
*k21 + k80*k9*x10*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*
k16*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x
19 + k80*k9*x10*k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k1
5*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19
+ k80*k9*x10*k12*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16
*k17*x7*x12*x15*k80*k21)/(k5 + k75)/k6/k11/k13/k14/k16/k17/x7^2/
x12/x15/(k21 + k22)/k8/(k10 + k80)*x18 + (k68 + k107)*(k12 + k13
)*(k7 + k8)*k4*x5*k75*k80*k9*x10*k62*k64/x7/(k5 + k75)/k6/k11/k1
3/k67/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2 + k74*x5
vbar[ 74] = k74*x5
vbar[ 75] = k75*((-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19*k11*k13*
k14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18*k20*k22*

```

```

k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 + k80*k9*x
10*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k16*k19*k20*k22
*k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k80*k9*x10
*k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*k20*k22*k
106*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80*k9*x10*k
12*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15
*k80*k21)*(k7 + k8)*k4*x5/(k5 + k75)/k6/k11/k13/k14/k16/k17/x7^2
/x12/x15/(k21 + k22)/k8/(k10 + k80)*x18 + (k68 + k107)*(k12 + k1
3)*k64*k62*x10*k9*k80*(k7 + k8)*k4*x5/x7/(k5 + k75)/k6/k11/k13/k
67/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2)

vbar[ 76] = (k15 + k16)*(k18 + k19)*(k12 + k13)*k80*k9*x10*k20*k22*k106*x19/
(k10 + k80)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k1
2 + k13)*(k68 + k107)*k80*k9*x10*k62*k64/(k10 + k80)/k11/k13/k67
/x19/(k63 + k64)*b1/b2 + k77*x7

vbar[ 77] = k77*x7

vbar[ 78] = (k15 + k16)*(k18 + k19)*(k12 + k13)*k80*k9*x10*k20*k22*k106*x19/
(k10 + k80)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k1
2 + k13)*(k68 + k107)*k80*k9*x10*k62*k64/(k10 + k80)/k11/k13/k67
/x19/(k63 + k64)*b1/b2 + k79*x10

vbar[ 79] = k79*x10

vbar[ 80] = k80*((k18 + k19)*(k15 + k16)*x19*k106*k22*k20*(k12 + k13)*k9*x10
/(k10 + k80)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k
68 + k107)*k64*k62*(k12 + k13)*k9*x10/(k10 + k80)/(k63 + k64)/x1
9/k67/k13/k11*b1/b2)

vbar[ 81] = k26*k28*x24*(k12 + k13)*(k18 + k19)*(k15 + k16)*k20*k22*k106*x19
/(k27 + k28)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k
12 + k13)*(k68 + k107)*k64*k62*k26*k28*x24/(k63 + k64)/(k27 + k2
8)/x19/k67/k13/k11*b1/b2 + k82*x24

vbar[ 82] = k82*x24

vbar[ 83] = k26*k28*x24*(k12 + k13)*(k18 + k19)*(k15 + k16)*k20*k22*k106*x19
/(k27 + k28)/(k21 + k22)/x15/x7/k17/k16/k14/k13/k11/x12*x18 + (k
12 + k13)*(k68 + k107)*k64*k62*k26*k28*x24/(k63 + k64)/(k27 + k2
8)/x19/k67/k13/k11*b1/b2 + k84*x27

vbar[ 84] = k84*x27

vbar[ 85] = k85*(k26*k28*x24*(k12 + k13)*(k18 + k19)*(k15 + k16)*k20*k22*k10
6*x19/(k27 + k28)/(k21 + k22)/x15/x12/x7/k85/k17/k16/k14/k13/k11
*x18 + k26*k28*x24*k62*k64*(k68 + k107)*(k12 + k13)/(k63 + k64)/
(k27 + k28)/x19/k85/k67/k13/k11*b1/b2)

vbar[ 86] = (k12 + k13)*(k30 + k85)*(k15 + k16)*(k18 + k19)*x29*x24*x19*k106
*k33*k31*k28*k26*k22*k20/(k32 + k33)/(k27 + k28)/(k21 + k22)/x27
/x15/x12/x7/k85/k29/k17/k16/k14/k13/k11*x18 + x29*(k68 + k107)*(
k30 + k85)*(k12 + k13)*k26*k28*k31*k33*k62*k64*x24/k11/k13/k67/k
85/x19/(k63 + k64)/(k32 + k33)/(k27 + k28)/k29/x27*b1/b2 + k87*x
29

vbar[ 87] = k87*x29

vbar[ 88] = (k12 + k13)*(k30 + k85)*(k15 + k16)*(k18 + k19)*x29*x24*x19*k106
*k33*k31*k28*k26*k22*k20/(k32 + k33)/(k27 + k28)/(k21 + k22)/x27
/x15/x12/x7/k85/k29/k17/k16/k14/k13/k11*x18 - k91*RootOf(a1 + a2
*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (k68 + k107)*(3*k11*k33*k44
*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 +
3*k11*k33*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x
33*k27*k29 + k33*k46*k48*k49*k51*k57*k58*k60*k62*k64*k13*k92*x24
*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k46*k48*k49*k51*k5
7*k58*k60*k62*k64*k85*k13*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28
*k31 + k33*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*k92*x24*x29*x

```


*k11*k33*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x3
9*k28*k29 + 4*k11*k33*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k9
4*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k57*k61*k63*k85*k
13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k50*k57*
k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45
*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 +
4*k11*k33*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*k115*x27*x
39*k27*k29 + 4*k11*k33*k45*k46*k48*k50*k57*k61*k64*k85*k13*k93*k
94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k50*k57*k61*k64*
k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k50
*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k4
5*k46*k48*k50*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 +
4*k11*k33*k45*k46*k48*k50*k59*k61*k63*k85*k13*k93*k94*k115*x27*
x39*k27*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k63*k85*k13*k92*k93*
k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k51*k57*k61*k64*k85
*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k51*k5
7*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k
46*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29
+ 4*k11*k33*k46*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27
*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93
*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k50*k59*k61*k64*k8
5*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k
59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*
k46*k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29
+ 3*k11*k32*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x2
7*x33*k28*k29 + 3*k11*k32*k44*k48*k50*k57*k61*k64*k85*k13*k92*k9
3*k94*k115*x27*x33*k27*k29 + 3*k11*k32*k44*k48*k51*k57*k61*k63*k
85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k32*k44*k48*k51*
k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 3*k11*k32
*k44*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k2
9 + 3*k11*k32*k44*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x
27*x33*k27*k29 + 3*k11*k32*k44*k48*k50*k59*k61*k63*k85*k13*k92*k
93*k94*k115*x27*x33*k28*k29 + 3*k11*k32*k44*k48*k50*k59*k61*k63*
k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k46*k48*k50
*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k3
2*k46*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k
29 + 4*k11*k32*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*k115*
x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k51*k59*k61*k64*k85*k13*
k93*k94*k115*x27*x39*k27*k29 + 3*k11*k33*k44*k47*k50*k57*k61*k63
*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k33*k44*k47*k5
0*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k
32*k46*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*
k29 + 4*k11*k32*k46*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115
*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k51*k59*k61*k63*k85*k13*k92
*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k59*k61*k6
3*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 3*k11*k32*k44*k47*k
51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*
k32*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27
*k29 + 3*k11*k32*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k11
5*x27*x33*k28*k29 + 3*k11*k32*k44*k47*k50*k59*k61*k64*k85*k13*k9
2*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k45*k46*k48*k51*k59*k
61*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*
k48*k51*k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11
*k32*k45*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k2
8*k29 + 4*k11*k32*k45*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k1
15*x27*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k51*k57*k61*k63*k85*k
13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k51*k57*
k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 3*k11*k33*k44*k48
*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k1
1*k33*k44*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k
27*k29 + 3*k11*k33*k44*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k
115*x27*x33*k28*k29 + 3*k11*k33*k44*k48*k50*k59*k61*k64*k85*k13*
k92*k93*k94*k115*x27*x33*k27*k29 + 3*k11*k33*k44*k48*k50*k59*k61
*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k33*k44*k4
8*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 3*k
11*k33*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*
k28*k29 + 3*k11*k33*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*
k115*x27*x33*k27*k29 + 3*k11*k33*k44*k48*k50*k57*k61*k63*k85*k13


```

*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k33*k44*k48*k50*k57*k6
1*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 3*k11*k33*k44*k
47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*
k11*k33*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33
*k27*k29 + 3*k11*k33*k44*k47*k51*k59*k61*k63*k85*k13*k92*k93*k94
*k115*x27*x33*k28*k29 + 3*k11*k33*k44*k47*k51*k59*k61*k63*k85*k1
3*k92*k93*k94*k115*x27*x33*k27*k29 + 3*k11*k32*k44*k47*k50*k59*k
61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k32*k44*
k47*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 3
*k11*k32*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x3
3*k28*k29 + 3*k11*k32*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k9
4*k115*x27*x33*k27*k29 + 3*k11*k32*k44*k47*k50*k57*k61*k63*k85*k
13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k32*k44*k47*k50*k57*
k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k45
*k46*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 +
4*k11*k32*k45*k46*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x
39*k27*k29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k63*k85*k13*k93*k
94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k63*
k85*k13*k93*k94*k115*x27*x39*k27*k29 + 3*k11*k33*k44*k47*k51*k57
*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 3*k11*k33*k4
4*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 +
3*k11*k33*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*
x33*k28*k29 + 3*k11*k33*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*
k94*k115*x27*x33*k27*k29)/(k48/c1/x19/k67/k60/x52/k57/k58/x49/k51
/k49/x42/k46/x39/k13/k11/k29/x27/k85/(k63 + k64)/(k32 + k33)/(k2
7 + k28)/(k45 + k92)*b1/b2 + k89*x33

```

```
vbar[ 89] = k89*x33
```

```

vbar[ 90] = k90*((k12 + k13)*(k30 + k85)*(k15 + k16)*(k18 + k19)*x29*x24*x19
*k106*k33*k31*k28*k26*k22*k20/k11/k13/k14/k16/k17/k29/k85/k90/x7
/x12/x15/x27/(k32 + k33)/(k27 + k28)/(k21 + k22)*x18 - 2/k90*k91
*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4) + (k68 + k107)
*(4*k11*k33*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27
*x33*k28*k29 + 4*k11*k33*k44*k47*k50*k59*k61*k64*k85*k13*k92*k93
*k94*k115*x27*x33*k27*k29 + k33*k46*k48*k49*k51*k57*k58*k60*k62*
k64*k13*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k46
*k48*k49*k51*k57*k58*k60*k62*k64*k85*k13*k92*x24*x29*x39*k26*x42
*x49*x52*c1*k28*k31 + k33*k46*k48*k49*k51*k12*k57*k58*k60*k62*k6
4*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + 4*k11*k32*k44
*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 +
4*k11*k32*k44*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x
33*k27*k29 + 4*k11*k32*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k
94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k51*k59*k61*k64*k85
*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k51*k59
*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k4
4*k47*k51*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 +
4*k11*k32*k44*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*
x33*k28*k29 + 4*k11*k32*k44*k47*k51*k57*k61*k64*k85*k13*k92*k93*
k94*k115*x27*x33*k27*k29 + 4*k11*k32*k46*k48*k51*k57*k61*k64*k85
*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k5
7*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k
46*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29
+ 4*k11*k32*k46*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27
*x39*k27*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k64*k85*k13*k92*k93
*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k50*k59*k61*k64*k8
5*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k50*k
59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*
k46*k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29
+ 4*k11*k32*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x2
7*x39*k28*k29 + 4*k11*k32*k46*k48*k50*k57*k61*k64*k85*k13*k92*k9
3*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k64*k
85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k51*
k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32
*k45*k46*k48*k50*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k2
9 + 4*k11*k32*k45*k46*k48*k50*k57*k61*k64*k85*k13*k93*k94*k115*x
27*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k50*k57*k61*k63*k85*k13*k
93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k50*k57*k61*

```

k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k44*k48*k51
*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k3
2*k44*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k
29 + k33*k45*k46*k48*k49*k51*k57*k58*k60*k62*k64*k13*x24*x29*x39
*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k46*k48*k49*k51*k12*k57*k5
8*k60*k62*k64*k85*k92*x24*x29*x39*k26*x42*x49*x52*c1*k28*k31 + k
33*k45*k46*k48*k49*k51*k57*k58*k60*k62*k64*k85*k13*x24*x29*x39*k
26*x42*x49*x52*c1*k28*k31 + k33*k45*k46*k48*k49*k51*k12*k57*k58*
k60*k62*k64*x24*x29*x39*k26*x42*x49*x52*c1*k28*k30*k31 + k33*k45
*k46*k48*k49*k51*k12*k57*k58*k60*k62*k64*k85*x24*x29*x39*k26*x42
*x49*x52*c1*k28*k31 + 4*k11*k33*k44*k47*k50*k59*k61*k63*k85*k13*
k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k50*k59*k61
*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k4
7*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k
11*k33*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*
k27*k29 + 4*k11*k33*k44*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*
k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k51*k59*k61*k64*k85*k13
*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k51*k59*k6
1*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k
48*k51*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*
k11*k33*k44*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33
*k28*k29 + 4*k11*k33*k44*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94
*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k48*k51*k59*k61*k63*k85*k1
3*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k51*k59*k
61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*
k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4
*k11*k32*k44*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x3
3*k27*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k63*k85*k13*k92*k93*k9
4*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*k59*k61*k63*k
85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*
k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45
*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 +
4*k11*k33*k45*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*k115*x27*x
39*k27*k29 + 4*k11*k33*k45*k46*k48*k51*k57*k61*k63*k85*k13*k93*k
94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*k57*k61*k63*
k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k50
*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k4
5*k46*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29 +
4*k11*k33*k45*k46*k48*k50*k59*k61*k63*k85*k13*k93*k94*k115*x27*
x39*k28*k29 + 4*k11*k33*k46*k48*k50*k57*k61*k64*k85*k13*k92*k93*
k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k50*k57*k61*k64*k85
*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k5
7*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k
46*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29
+ 4*k11*k33*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93*k94*k115*x27
*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k51*k59*k61*k64*k85*k13*k93
*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k50*k57*k61*k6
4*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k45*k46*k48*k
50*k57*k61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*
k45*k46*k48*k50*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29
+ 4*k11*k33*k45*k46*k48*k50*k57*k61*k63*k85*k13*k93*k94*k115*x2
7*x39*k27*k29 + 4*k11*k33*k45*k46*k48*k50*k59*k61*k63*k85*k13*k9
3*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k51*k59*k61*k63*k
85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k51*
k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33
*k46*k48*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k2
9 + 4*k11*k33*k46*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x
27*x39*k28*k29 + 4*k11*k33*k46*k48*k51*k57*k61*k63*k85*k13*k92*k
93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k46*k48*k50*k59*k61*k64*
k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k33*k46*k48*k50
*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k3
3*k46*k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k
29 + 4*k11*k33*k46*k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*
x27*x39*k27*k29 + 4*k11*k32*k44*k48*k50*k57*k61*k64*k85*k13*k92*
k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k50*k57*k61*k64
*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k48*k5
1*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k
32*k44*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*

```

k29 + 4*k11*k32*k44*k48*k50*k59*k61*k64*k85*k13*k92*k93*k94*k115
*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k50*k59*k61*k64*k85*k13*k92
*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k48*k50*k59*k61*k6
3*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k48*k
50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*
k32*k46*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k28
*k29 + 4*k11*k32*k46*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k11
5*x27*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k51*k59*k61*k64*k85*k1
3*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k51*k59*k
61*k64*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*k44*k47*
k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11
*k33*k44*k47*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k2
7*k29 + 4*k11*k32*k46*k48*k51*k59*k61*k64*k85*k13*k92*k93*k94*k1
15*x27*x39*k28*k29 + 4*k11*k32*k46*k48*k51*k59*k61*k64*k85*k13*k
92*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k46*k48*k51*k59*k61*
k63*k85*k13*k92*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k46*k48
*k51*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x39*k27*k29 + 4*k1
1*k32*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k
28*k29 + 4*k11*k32*k44*k47*k51*k57*k61*k63*k85*k13*k92*k93*k94*k
115*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k50*k59*k61*k64*k85*k13*
k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k50*k59*k61
*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k45*k4
6*k48*k51*k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k
11*k32*k45*k46*k48*k51*k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*
k27*k29 + 4*k11*k32*k45*k46*k48*k51*k57*k61*k64*k85*k13*k93*k94*
k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k51*k57*k61*k64*k85
*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k51*k5
7*k61*k63*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k
46*k48*k51*k57*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*
k11*k33*k44*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33
*k28*k29 + 4*k11*k33*k44*k48*k51*k57*k61*k63*k85*k13*k92*k93*k94
*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k50*k59*k61*k64*k85*k1
3*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k50*k59*k
61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*
k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4
*k11*k33*k44*k48*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x3
3*k27*k29 + 4*k11*k33*k44*k48*k50*k57*k61*k64*k85*k13*k92*k93*k9
4*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k48*k50*k57*k61*k64*k85*k
13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k48*k50*k57*
k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44
*k48*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 +
4*k11*k33*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k94*k115*x27*x
33*k28*k29 + 4*k11*k33*k44*k47*k51*k59*k61*k64*k85*k13*k92*k93*k
94*k115*x27*x33*k27*k29 + 4*k11*k33*k44*k47*k51*k59*k61*k63*k85*
k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k51*k59
*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k4
4*k47*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 +
4*k11*k32*k44*k47*k50*k59*k61*k63*k85*k13*k92*k93*k94*k115*x27*
x33*k27*k29 + 4*k11*k32*k44*k47*k50*k57*k61*k64*k85*k13*k92*k93*
k94*k115*x27*x33*k28*k29 + 4*k11*k32*k44*k47*k50*k57*k61*k64*k85
*k13*k92*k93*k94*k115*x27*x33*k27*k29 + 4*k11*k32*k44*k47*k50*k5
7*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29 + 4*k11*k32*k
44*k47*k50*k57*k61*k63*k85*k13*k92*k93*k94*k115*x27*x33*k27*k29
+ 4*k11*k32*k45*k46*k48*k50*k59*k61*k64*k85*k13*k93*k94*k115*x27
*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k64*k85*k13*k93
*k94*k115*x27*x39*k27*k29 + 4*k11*k32*k45*k46*k48*k50*k59*k61*k6
3*k85*k13*k93*k94*k115*x27*x39*k28*k29 + 4*k11*k32*k45*k46*k48*k
50*k59*k61*k63*k85*k13*k93*k94*k115*x27*x39*k27*k29 + 4*k11*k33*
k44*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x27*x33*k28*k29
+ 4*k11*k33*k44*k47*k51*k57*k61*k64*k85*k13*k92*k93*k94*k115*x2
7*x33*k27*k29 + 4*k11*k33*k44*k47*k51*k57*k61*k63*k85*k13*k92*k9
3*k94*k115*x27*x33*k28*k29 + 4*k11*k33*k44*k47*k51*k57*k61*k63*k
85*k13*k92*k93*k94*k115*x27*x33*k27*k29)/(k63 + k64)/(k45 + k92)
/(k32 + k33)/(k27 + k28)/k90/k85/x27/k29/k11/k13/x19/k67/x39/k46
/k48/x42/k49/k51/x49/k58/k57/x52/k60/c1*b1/b2)

```

```
vbar[ 91] = k91*RootOf(a1 + a2*_Z + a3*_Z^2 + a4*_Z^3 + a5*_Z^4)
```

```

vbar[ 92] = -k92*k44*x33*(k47 + k48)*(k68 + k107)*(k57 + k59)*(k50 + k51)*k1
15*k94*k61*k93/k48/c1/x19/k67/k60/x52/k57/k58/x49/k51/k49/x42/k4
6/x39/(k45 + k92)*b1/b2

vbar[ 93] = -k93*(k68 + k107)*(k57 + k59)*(k50 + k51)*k115*k94*k61/c1/x19/k6
7/k60/x52/k57/k58/x49/k51/k49/x42*b1/b2

vbar[ 94] = -k94*(k68 + k107)*k61/x52/k60/k67/x19*b1/b2

vbar[ 95] = -(k69*k54*k52*x45*k61*k94*k115*k100*k50*k107*k59 + k69*k54*k52*x
45*k61*k94*k115*k100*k50*k57*k68 + k69*k54*k52*x45*k61*k94*k115*
k100*k50*k57*k107 + k69*k54*k52*x45*k61*k94*k115*k100*k50*k68*k5
9 + k69*k54*k52*x45*k61*k94*k115*k100*k51*k107*k59 + k69*k54*k52
*x45*k61*k94*k115*k100*k51*k57*k68 + k69*k54*k52*x45*k61*k94*k11
5*k100*k51*k57*k107 + k69*k54*k52*x45*k61*k94*k115*k100*k51*k68*
k59 + k107*k67*k60*x52*k57*k58*x49*k51*k49*x42*k54*k99*k100 + k1
07*k67*k60*x52*k57*k58*x49*k51*k49*x42*k53*k99*k100 + k107*k67*k
60*x52*k57*k58*x49*k51*k49*x42*k53*k99*k70 + k107*k67*k60*x52*k5
7*k58*x49*k51*k49*x42*k53*k69*x19*k100 + k107*k67*k60*x52*k57*k5
8*x49*k51*k49*x42*k54*k99*k70 + k107*k67*k60*x52*k57*k58*x49*k51
*k49*x42*k54*k69*x19*k100)/(k53 + k54)/(k99*k100 + k99*k70 + k69
*x19*k100)/x42/k49/k51/x49/k58/k57/x52/k60/k67*b1/b2 + k96*x19

vbar[ 96] = k96*x19

vbar[ 97] = -k52*k115*k94*k61*k54*(k68 + k107)*(k57 + k59)*(k50 + k51)*x45/x
19/(k53 + k54)/k67/k60/x52/k57/k58/x49/k51/k49/x42*b1/b2 + k98*x
45

vbar[ 98] = k98*x45

vbar[ 99] = -k99*(k70 + k100)*k54*k52*x45*k61*k94*k115*(k68 + k107)*(k57 + k
59)*(k50 + k51)/x19/(k53 + k54)/(k99*k100 + k99*k70 + k69*x19*k1
00)/x42/k49/k51/x49/k58/k57/x52/k60/k67*b1/b2

vbar[100] = -k100*k69*k54*k52*x45*k61*k94*k115*(k68 + k107)*(k57 + k59)*(k50
+ k51)/(k53 + k54)/(k99*k100 + k99*k70 + k69*x19*k100)/x42/k49/
k51/x49/k58/k57/x52/k60/k67*b1/b2

vbar[101] = k20*k22*k106*x19*(k18 + k19)*(k15 + k16)/k14/k16/k17/x7/x15/(k21
+ k22)*x18 + k102*x12

vbar[102] = k102*x12

vbar[103] = k20*k22*k106*x19*(k18 + k19)*(k15 + k16)/k14/k16/k17/x7/x15/(k21
+ k22)*x18

vbar[104] = k106*(k18 + k19)/k17/x7*x18 + k105*x15

vbar[105] = k105*x15

vbar[106] = k106*(k18 + k19)/k17/x7*x18

vbar[107] = -k107*b1/b2

vbar[108] = k25*k23*x21*k106*(k18 + k19)*(k15 + k16)/k17/x7/k16/k14/x15/(k24
+ k25)*x18 + k109*x21

vbar[109] = k109*x21

vbar[110] = k25*k23*x21*k106*(k18 + k19)*(k15 + k16)/k17/x7/k16/k14/x15/(k24
+ k25)*x18

vbar[111] = (-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19*k11*k13*k14*k
16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18*k20*k22*k106*
x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 + k80*k9*x10*k1
3*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k16*k19*k20*k22*k106
*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k80*k9*x10*k13*

```

```

k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*k20*k22*k106*x
19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80*k9*x10*k12*k1
5*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*
k21)*(k7 + k8)*k75*x5*k4*(k112*k2 + k112*k3 + k1*x2*k3)/x2/k1/(k
5 + k75)/k3/k6/k11/k13/k14/k16/k17/x7^2/x12/x15/(k21 + k22)/k8/(
k10 + k80)*x18 + (k12 + k13)*(k68 + k107)*k64*k62*x10*k9*k80*(k7
+ k8)*k75*x5*k4*(k112*k2 + k112*k3 + k1*x2*k3)/x7/x2/k1/(k5 + k
75)/k3/k6/k11/k13/k67/x19/(k63 + k64)/k8/(k10 + k80)*b1/b2

vbar[112] = k112*((-k19*k11*k13*k14*k16*k17*x7*x12*x15*k80*k22 - k19*k11*k13
*k14*k16*k17*x7*x12*x15*k10*k22 + k80*k9*x10*k12*k16*k18*k20*k22
*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x15*k10*k21 + k80*k9*
x10*k13*k15*k19*k20*k22*k106*x19 + k80*k9*x10*k13*k16*k19*k20*k2
2*k106*x19 + k80*k9*x10*k13*k15*k18*k20*k22*k106*x19 + k80*k9*x1
0*k13*k16*k18*k20*k22*k106*x19 + k80*k9*x10*k12*k15*k18*k20*k22*
k106*x19 + k80*k9*x10*k12*k16*k19*k20*k22*k106*x19 + k80*k9*x10*
k12*k15*k19*k20*k22*k106*x19 - k19*k11*k13*k14*k16*k17*x7*x12*x1
5*k80*k21)*(k7 + k8)*k75*x5*k4*(k2 + k3)/x2/k1/(k5 + k75)/k3/k6/
k11/k13/k14/k16/k17/x7^2/x12/x15/(k21 + k22)/k8/(k10 + k80)*x18
+ (k68 + k107)*(k12 + k13)*k64*k62*x10*k9*k80*(k7 + k8)*k75*x5*k
4*(k2 + k3)/x7/x2/k1/(k5 + k75)/k3/k6/k11/k13/k67/x19/(k63 + k64
)/k8/(k10 + k80)*b1/b2

vbar[113] = -k61*k94*k115*(k68 + k107)*(k57 + k59)/x52/k60/k67/x19/k57/k58/x
49*b1/b2 + k114*x42

vbar[114] = k114*x42

vbar[115] = -k61*k94*k115*(k68 + k107)*(k57 + k59)/x52/k60/k67/x19/k57/k58/x
49*b1/b2

```

Verify steady state. $\dot{x} = S * vbar$, where

```

xdot[ 1] = 0
xdot[ 2] = 0
xdot[ 3] = 0
xdot[ 4] = 0
xdot[ 5] = 0
xdot[ 6] = 0
xdot[ 7] = 0
xdot[ 8] = 0
xdot[ 9] = 0
xdot[10] = 0
xdot[11] = 0
xdot[12] = 0
xdot[13] = 0
xdot[14] = 0
xdot[15] = 0
xdot[16] = 0
xdot[17] = 0
xdot[18] = 0
xdot[19] = 0
xdot[20] = 0
xdot[21] = 0
xdot[22] = 0
xdot[23] = 0
xdot[24] = 0
xdot[25] = 0
xdot[26] = 0
xdot[27] = 0
xdot[28] = 0
xdot[29] = 0
xdot[30] = 0
xdot[31] = 0
xdot[32] = 0
xdot[33] = 0
xdot[34] = 0

```

```
xdot[35] = 0
xdot[36] = 0
xdot[37] = 0
xdot[38] = 0
xdot[39] = 0
xdot[40] = 0
xdot[41] = 0
xdot[42] = 0
xdot[43] = 0
xdot[44] = 0
xdot[45] = 0
xdot[46] = 0
xdot[47] = 0
xdot[48] = 0
xdot[49] = 0
xdot[50] = 0
xdot[51] = 0
xdot[52] = 0
xdot[53] = 0
xdot[54] = 0
xdot[55] = 0
xdot[56] = 0
xdot[57] = 0
xdot[58] = 0
```