

```
In [1]: import numpy as np
import time
import string
```

```
In [36]: %%time
slv = ndoku(4, domain='QQ')

computing groebner basis...
Polynomial Sequence with 26 Polynomials in 16 Variables
...done (190.929376 sec)
CPU times: user 3min 8s, sys: 769 ms, total: 3min 9s
Wall time: 3min 10s
```

```
In [37]: syms = slv.symbols
cond=dict([(syms[0,3], 4), (syms[1,0], 4), (syms[1,2], 2), (syms[2,1],
3), (syms[2,3], 1), (syms[3,0], 1)])
slv.fit(cond)
slv.print_sols()
```

input was:

```
- - - 4
4 - 2 -
- 3 - 1
1 - - -
```

solution is:

```
3 2 1 4
4 1 2 3
2 3 4 1
1 4 3 2
```

```
In [635]: tuple(slv.G)
```

```
Out[635]: (-x0^3*x1^2*x2*x4 - 1/2*x0^3*x1^2*x2*x8 - 1/2*x0^3*x1^2*x4*x8 + x0^3*x1
^2*x6*x8 + 1/2*x0^3*x1^2*x2*x9 - 1/2*x0^3*x1^2*x4*x9 - x0^3*x1^2*x4*x10
+ 5/2*x0^3*x1^2*x2 + 15/2*x0^3*x1^2*x4 + 5*x0^3*x1*x2*x4 + 15/2*x0^2*x1
```

$$\begin{aligned} &^2*x2*x4 - 5/2*x0^3*x1^2*x6 + 5/2*x0^3*x1*x2*x8 + 15/4*x0^2*x1^2*x2*x8 \\ &+ 5/2*x0^3*x1*x4*x8 + 15/4*x0^2*x1^2*x4*x8 - 5*x0^3*x1*x6*x8 - 15/2*x0^ \\ &2*x1^2*x6*x8 - 5/2*x0^3*x1*x2*x9 - 15/4*x0^2*x1^2*x2*x9 + 5/2*x0^3*x1*x \\ &4*x9 + 15/4*x0^2*x1^2*x4*x9 + 5/2*x0^3*x1^2*x10 + 5*x0^3*x1*x4*x10 + 1 \\ &5/2*x0^2*x1^2*x4*x10 - 249/20*x0^3*x1^2 - 493/40*x0^3*x1*x2 - 747/40*x0 \\ &^2*x1^2*x2 - 1497/40*x0^3*x1*x4 - 281/5*x0^2*x1^2*x4 - 19/5*x0^3*x2*x4 \\ &- 187/5*x0^2*x1*x2*x4 - 327/20*x0*x1^2*x2*x4 + 503/40*x0^3*x1*x6 + 757/ \\ &40*x0^2*x1^2*x6 + 1/8*x0^3*x1*x8 + 1/8*x0^2*x1^2*x8 - 39/20*x0^3*x2*x8 \\ &- 749/40*x0^2*x1*x2*x8 - 163/20*x0*x1^2*x2*x8 - 39/20*x0^3*x4*x8 - 749/ \\ &40*x0^2*x1*x4*x8 - 163/20*x0*x1^2*x4*x8 + 3/40*x0^2*x2*x4*x8 + 1/10*x0* \\ &x1*x2*x4*x8 + 3/20*x1^2*x2*x4*x8 + 153/40*x0^3*x6*x8 + 1499/40*x0^2*x1* \\ &x6*x8 + 82/5*x0*x1^2*x6*x8 + 1/8*x0^3*x1*x9 + 1/8*x0^2*x1^2*x9 + 79/40* \\ &x0^3*x2*x9 + 94/5*x0^2*x1*x2*x9 + 41/5*x0*x1^2*x2*x9 - 37/20*x0^3*x4*x9 \\ &- 747/40*x0^2*x1*x4*x9 - 41/5*x0*x1^2*x4*x9 + 1/8*x0^2*x2*x4*x9 - 493/4 \\ &0*x0^3*x1*x10 - 371/20*x0^2*x1^2*x10 - 153/40*x0^3*x4*x10 - 1499/40*x0^ \\ &2*x1*x4*x10 - 82/5*x0*x1^2*x4*x10 + 483/8*x0^3*x1 + 183/2*x0^2*x1^2 + 9 \\ &*x0^3*x2 + 733/8*x0^2*x1*x2 + 323/8*x0*x1^2*x2 + 227/8*x0^3*x4 + 2239/8 \\ &*x0^2*x1*x4 + 245/2*x0*x1^2*x4 + 111/4*x0^2*x2*x4 + 81*x0*x1*x2*x4 + 3 \\ &7/4*x1^2*x2*x4 - 39/4*x0^3*x6 - 761/8*x0^2*x1*x6 - 335/8*x0*x1^2*x6 - \\ &1/8*x0^3*x8 - 13/8*x0^2*x1*x8 - 7/8*x0*x1^2*x8 + 115/8*x0^2*x2*x8 + 32 \\ &3/8*x0*x1*x2*x8 + 35/8*x1^2*x2*x8 + 115/8*x0^2*x4*x8 + 323/8*x0*x1*x4*x \\ &8 + 35/8*x1^2*x4*x8 - 5/8*x0*x2*x4*x8 - x1*x2*x4*x8 - 229/8*x0^2*x6*x8 \\ &- 655/8*x0*x1*x6*x8 - 39/4*x1^2*x6*x8 - 5/8*x0^3*x9 - 15/8*x0^2*x1*x9 - \\ &5/8*x0*x1^2*x9 - 61/4*x0^2*x2*x9 - 165/4*x0*x1*x2*x9 - 39/8*x1^2*x2*x9 \\ &+ 107/8*x0^2*x4*x9 + 325/8*x0*x1*x4*x9 + 39/8*x1^2*x4*x9 - 5/8*x0*x2*x4 \\ &*x9 + 73/8*x0^3*x10 + 731/8*x0^2*x1*x10 + 40*x0*x1^2*x10 + 229/8*x0^2*x \\ &4*x10 + 655/8*x0*x1*x4*x10 + 39/4*x1^2*x4*x10 - 339/8*x0^3 - 3533/8*x0^ \\ &2*x1 - 775/4*x0*x1^2 - 259/4*x0^2*x2 - 196*x0*x1*x2 - 89/4*x1^2*x2 - 16 \\ &79/8*x0^2*x4 - 2431/4*x0*x1*x4 - 285/4*x1^2*x4 - 115/2*x0*x2*x4 - 45*x1 \\ &*x2*x4 + 147/2*x0^2*x6 + 841/4*x0*x1*x6 + 25*x1^2*x6 + 2*x0^2*x8 + 15/2 \\ &*x0*x1*x8 + 9/4*x1^2*x8 - 119/4*x0*x2*x8 - 21*x1*x2*x8 - 119/4*x0*x4*x8 \\ &- 21*x1*x4*x8 + 7/4*x2*x4*x8 + 249/4*x0*x6*x8 + 97/2*x1*x6*x8 + 27/4*x0 \\ &^2*x9 + 27/4*x0*x1*x9 + 1/2*x1^2*x9 + 69/2*x0*x2*x9 + 49/2*x1*x2*x9 - 1 \\ &11/4*x0*x4*x9 - 24*x1*x4*x9 + 1/2*x2*x4*x9 - 541/8*x0^2*x10 - 787/4*x0* \\ &x1*x10 - 47/2*x1^2*x10 - 249/4*x0*x4*x10 - 97/2*x1*x4*x10 + 2425/8*x0^2 \\ &+ 3705/4*x0*x1 + 215/2*x1^2 + 130*x0*x2 + 105*x1*x2 + 1785/4*x0*x4 + 35 \\ &0*x1*x4 + 115/4*x2*x4 - 645/4*x0*x6 - 125*x1*x6 - 85/8*x0*x8 - 15*x1*x8 \\ &+ 105/8*x2*x8 + 105/8*x4*x8 - 145/4*x6*x8 - 165/8*x0*x9 - 5*x1*x9 - 16 \\ &5/8*x2*x9 + 125/8*x4*x9 + 145*x0*x10 + 115*x1*x10 + 145/4*x4*x10 - 1213 \end{aligned}$$

$$\begin{aligned}
& 7/20*x0 - 2509/5*x1 - 1173/20*x2 - 4887/20*x4 + 939/10*x6 + 83/4*x8 + 2 \\
& 9/2*x9 - 829/10*x10 + 577/2, \\
& 1/2*x0^3*x1^2*x2 + 1/3*x0^3*x1^2*x4 + 2/3*x0^3*x1*x2*x4 - 2/3*x0^2*x1^ \\
& 2*x2*x4 + 7/6*x0^3*x1^2*x6 + 5/6*x0^3*x1^2*x8 + 1/6*x0^3*x1*x2*x8 - 1/6 \\
& *x0^2*x1^2*x2*x8 + 1/6*x0^3*x1*x4*x8 - 1/6*x0^2*x1^2*x4*x8 + 1/2*x0^3*x \\
& 2*x4*x8 + 2/3*x0^2*x1*x2*x4*x8 + x0*x1^2*x2*x4*x8 - 1/6*x0^3*x1*x6*x8 + \\
& x0^2*x1^2*x6*x8 + 5/6*x0^3*x1^2*x9 + 1/3*x0^3*x1*x2*x9 + 1/2*x0^2*x1^2* \\
& x2*x9 + 1/2*x0^3*x1*x4*x9 - 1/2*x0^2*x1^2*x4*x9 + 5/6*x0^3*x2*x4*x9 + \\
& 4/3*x0^3*x1^2*x10 + 1/6*x0^3*x1*x4*x10 - x0^2*x1^2*x4*x10 - 25/2*x0^3*x \\
& 1^2 - 65/12*x0^3*x1*x2 - 35/12*x0^2*x1^2*x2 - 65/12*x0^3*x1*x4 + 10/3*x \\
& 0^2*x1^2*x4 - 5*x0^3*x2*x4 - 10/3*x0^2*x1*x2*x4 + 5/6*x0*x1^2*x2*x4 - 6 \\
& 5/12*x0^3*x1*x6 - 45/4*x0^2*x1^2*x6 - 55/12*x0^3*x1*x8 - 95/12*x0^2*x1^ \\
& 2*x8 - 5/3*x0^3*x2*x8 - 25/12*x0^2*x1*x2*x8 - 5/3*x0*x1^2*x2*x8 - 5/3*x \\
& 0^3*x4*x8 - 25/12*x0^2*x1*x4*x8 - 5/3*x0*x1^2*x4*x8 - 65/12*x0^2*x2*x4* \\
& x8 - 25/3*x0*x1*x2*x4*x8 - 5/2*x1^2*x2*x4*x8 + 5/12*x0^3*x6*x8 - 15/4*x \\
& 0^2*x1*x6*x8 - 5*x0*x1^2*x6*x8 - 25/4*x0^3*x1*x9 - 25/4*x0^2*x1^2*x9 - \\
& 35/12*x0^3*x2*x9 - 5*x0^2*x1*x2*x9 - 5/2*x0*x1^2*x2*x9 - 10/3*x0^3*x4*x \\
& 9 - 5/4*x0^2*x1*x4*x9 + 5/2*x0*x1^2*x4*x9 - 25/4*x0^2*x2*x4*x9 - 85/12* \\
& x0^3*x1*x10 - 15/2*x0^2*x1^2*x10 - 5/12*x0^3*x4*x10 + 15/4*x0^2*x1*x4*x \\
& 10 + 5*x0*x1^2*x4*x10 + 895/12*x0^3*x1 + 265/3*x0^2*x1^2 + 55/3*x0^3*x2 \\
& + 505/12*x0^2*x1*x2 + 145/12*x0*x1^2*x2 + 235/12*x0^3*x4 + 65/4*x0^2*x1 \\
& *x4 - 50/3*x0*x1^2*x4 + 245/6*x0^2*x2*x4 + 50/3*x0*x1*x2*x4 + 35/6*x1^2 \\
& *x2*x4 + 5/2*x0^3*x6 + 635/12*x0^2*x1*x6 + 125/4*x0*x1^2*x6 + 85/12*x0^ \\
& 3*x8 + 575/12*x0^2*x1*x8 + 355/12*x0*x1^2*x8 + 205/12*x0^2*x2*x8 + 245/ \\
& 12*x0*x1*x2*x8 + 85/12*x1^2*x2*x8 + 205/12*x0^2*x4*x8 + 245/12*x0*x1*x4 \\
& *x8 + 85/12*x1^2*x4*x8 + 265/12*x0*x2*x4*x8 + 50/3*x1*x2*x4*x8 - 5/12*x \\
& 0^2*x6*x8 + 85/4*x0*x1*x6*x8 + 5/2*x1^2*x6*x8 + 55/4*x0^3*x9 + 565/12*x \\
& 0^2*x1*x9 + 55/4*x0*x1^2*x9 + 70/3*x0^2*x2*x9 + 35/2*x0*x1*x2*x9 + 5/4* \\
& x1^2*x2*x9 + 95/4*x0^2*x4*x9 - 15/4*x0*x1*x4*x9 - 5/4*x1^2*x4*x9 + 55/4 \\
& *x0*x2*x4*x9 + 65/12*x0^3*x10 + 165/4*x0^2*x1*x10 + 10*x0*x1^2*x10 + 5/ \\
& 12*x0^2*x4*x10 - 85/4*x0*x1*x4*x10 - 5/2*x1^2*x4*x10 - 1175/12*x0^3 - 6 \\
& 625/12*x0^2*x1 - 1225/6*x0*x1^2 - 925/6*x0^2*x2 - 425/3*x0*x1*x2 - 175/ \\
& 6*x1^2*x2 - 1775/12*x0^2*x4 - 25/2*x0*x1*x4 - 25/2*x1^2*x4 - 350/3*x0*x \\
& 2*x4 - 50*x1*x2*x4 - 25*x0^2*x6 - 875/6*x0*x1*x6 - 50/3*x1^2*x6 - 75*x0 \\
& ^2*x8 - 550/3*x0*x1*x8 - 75/2*x1^2*x8 - 200/3*x0*x2*x8 - 50*x1*x2*x8 - \\
& 200/3*x0*x4*x8 - 50*x1*x4*x8 - 175/6*x2*x4*x8 - 25/6*x0*x6*x8 - 25/3*x1 \\
& *x6*x8 - 625/6*x0^2*x9 - 625/6*x0*x1*x9 - 25/3*x1^2*x9 - 325/6*x0*x2*x9 \\
& - 25/3*x1*x2*x9 - 50*x0*x4*x9 - 25/3*x2*x4*x9 - 425/12*x0^2*x10 - 125/2 \\
& *x0*x1*x10 - 25/3*x1^2*x10 + 25/6*x0*x4*x10 + 25/3*x1*x4*x10 + 3159/4*x
\end{aligned}$$

$$\begin{aligned}
& 0^2 + 8053/6*x0*x1 + 601/3*x1^2 + 1327/3*x0*x2 + 222*x1*x2 + 2351/6*x0* \\
& x4 + 464/3*x1*x4 + 773/6*x2*x4 + 127/2*x0*x6 + 214/3*x1*x6 + 1095/4*x0* \\
& x8 + 230*x1*x8 + 373/4*x2*x8 + 373/4*x4*x8 - 47/6*x6*x8 + 2785/12*x0*x9 \\
& + 190/3*x1*x9 + 111/4*x2*x9 + 427/12*x4*x9 + 217/3*x0*x10 + 166/3*x1*x1 \\
& 0 + 47/6*x4*x10 - 4175/2*x0 - 3890/3*x1 - 925/2*x2 - 935/2*x4 - 5*x6 - \\
& 1955/6*x8 - 425/3*x9 - 235/3*x10 + 5915/3, \\
& 1/3*x0^2*x1^2 - 1/3*x0^3*x2 + 2/3*x0^2*x1*x2 + x0*x1^2*x2 - 1/3*x0^3*x \\
& 4 + 1/3*x0*x1^2*x4 + 2/3*x0^2*x2*x4 + 2/3*x0*x1*x2*x4 + 4/3*x1^2*x2*x4 \\
& - x0^3*x6 - 1/3*x0*x1^2*x6 - 2/3*x0^3*x8 + 1/3*x0^2*x1*x8 + 1/3*x0*x1^2 \\
& *x8 - 1/3*x0*x1*x2*x8 + 1/3*x1^2*x2*x8 - 1/3*x0*x1*x4*x8 + 1/3*x1^2*x4* \\
& x8 - x0*x2*x4*x8 - 1/3*x1*x2*x4*x8 - x0^2*x6*x8 - 2/3*x0*x1*x6*x8 - x1^ \\
& 2*x6*x8 - 2/3*x0^3*x9 + 1/3*x0^2*x1*x9 + 1/3*x0*x1^2*x9 - 1/3*x0^2*x2*x \\
& 9 + 1/3*x0*x1*x2*x9 + 2/3*x0^2*x4*x9 + x0*x1*x4*x9 + x1^2*x4*x9 + 1/3*x \\
& 0*x2*x4*x9 + x1*x2*x4*x9 - x0^3*x10 + 2/3*x0^2*x1*x10 + 1/3*x0*x1^2*x10 \\
& + x0^2*x4*x10 + 2/3*x0*x1*x4*x10 + x1^2*x4*x10 + 10*x0^3 - 20/3*x0^2*x1 \\
& - 20/3*x0*x1^2 - 10*x0*x1*x2 - 20/3*x1^2*x2 - 10/3*x0^2*x4 - 20/3*x0*x1 \\
& *x4 - 10*x1^2*x4 - 10/3*x0*x2*x4 - 10*x1*x2*x4 + 10*x0^2*x6 + 10/3*x0*x \\
& 1*x6 + 10/3*x1^2*x6 + 20/3*x0^2*x8 + 10/3*x0*x2*x8 + 10/3*x0*x4*x8 + 1 \\
& 0/3*x2*x4*x8 + 20/3*x0*x6*x8 + 20/3*x1*x6*x8 + 10/3*x0^2*x9 - 20/3*x0*x \\
& 1*x9 - 10/3*x1^2*x9 - 10/3*x1*x2*x9 - 20/3*x0*x4*x9 - 10*x1*x4*x9 - 10/ \\
& 3*x2*x4*x9 + 10/3*x0^2*x10 - 20/3*x0*x1*x10 - 10/3*x1^2*x10 - 20/3*x0*x \\
& 4*x10 - 20/3*x1*x4*x10 - 55*x0^2 + 200/3*x0*x1 + 100/3*x1^2 + 35/3*x0*x \\
& 2 + 45*x1*x2 + 100/3*x0*x4 + 200/3*x1*x4 + 40/3*x2*x4 - 35*x0*x6 - 65/3 \\
& *x1*x6 - 100/3*x0*x8 - 10*x1*x8 - 10*x2*x8 - 10*x4*x8 - 40/3*x6*x8 + 10 \\
& *x0*x9 + 100/3*x1*x9 + 10*x2*x9 + 70/3*x4*x9 + 10*x0*x10 + 70/3*x1*x10 \\
& + 40/3*x4*x10 + 100/3*x0 - 650/3*x1 - 50*x2 - 100*x4 + 50*x6 + 200/3*x8 \\
& - 200/3*x9 - 100/3*x10 + 524/3, \\
& x0^4 - 10*x0^3 + 35*x0^2 - 50*x0 + 24, \\
& x0*x1*x2 + x0*x1*x4 + x0*x2*x4 + x1*x2*x4 + x0*x1*x8 + x0*x2*x8 + x1*x \\
& 2*x8 + x0*x4*x8 + x1*x4*x8 + x2*x4*x8 + x0*x1*x10 + x0*x2*x10 + x1*x2*x \\
& 10 + x0*x4*x10 + x1*x4*x10 + x2*x4*x10 + x0*x8*x10 + x1*x8*x10 + x2*x8* \\
& x10 + x4*x8*x10 - 10*x0*x1 - 10*x0*x2 - 10*x1*x2 - 10*x0*x4 - 10*x1*x4 \\
& - 10*x2*x4 - 10*x0*x8 - 10*x1*x8 - 10*x2*x8 - 10*x4*x8 - 10*x0*x10 - 10 \\
& *x1*x10 - 10*x2*x10 - 10*x4*x10 - 10*x8*x10 + 65*x0 + 65*x1 + 65*x2 + 6 \\
& 5*x4 + 65*x8 + 65*x10 - 350, \\
& x0^3 + x0^2*x1 + x0*x1^2 - x0*x1*x2 - x1^2*x2 + x0^2*x4 + x1^2*x4 - x1 \\
& *x2*x4 + x0^2*x8 + x1^2*x8 - x1*x2*x8 - x0*x4*x8 - x0^2*x9 - x0*x1*x9 - \\
& x1^2*x9 - x0*x2*x9 - x1*x2*x9 - x2*x4*x9 - x2*x8*x9 + x4*x8*x9 - x0^2*x \\
& 10 - 2*x0*x1*x10 - x1^2*x10 - 2*x0*x2*x10 - 2*x1*x2*x10 - x0*x4*x10 - x
\end{aligned}$$

$$\begin{aligned}
& 1*x^4*x^{10} - 2*x^2*x^4*x^{10} - x^0*x^8*x^{10} - x^1*x^8*x^{10} - 2*x^2*x^8*x^{10} - 10*x^0^2 \\
& + 10*x^0*x^2 + 20*x^1*x^2 + 10*x^2*x^4 + 10*x^2*x^8 + 10*x^0*x^9 + 10*x^1*x^9 + 10* \\
& x^2*x^9 + 20*x^0*x^{10} + 20*x^1*x^{10} + 20*x^2*x^{10} + 10*x^4*x^{10} + 10*x^8*x^{10} - 30* \\
& x^0 - 65*x^1 - 100*x^2 - 30*x^4 - 30*x^8 - 35*x^9 - 100*x^{10} + 350, \\
& -1/2*x^0^3 - 1/2*x^0^2*x^1 - 1/2*x^0*x^1*x^2 + 1/2*x^1^2*x^2 - 1/2*x^0^2*x^4 - \\
& 1/2*x^0*x^1*x^4 - x^0*x^2*x^4 - x^1*x^2*x^4 - 1/2*x^0*x^1*x^6 - 1/2*x^1^2*x^6 - x^1*x^4 \\
& *x^6 - 1/2*x^0^2*x^8 - 3/2*x^0*x^1*x^8 - 1/2*x^1^2*x^8 - x^0*x^2*x^8 - 1/2*x^1*x^2*x \\
& 8 - x^0*x^4*x^8 - 3/2*x^1*x^4*x^8 - 1/2*x^2*x^4*x^8 + 1/2*x^0*x^6*x^8 + 1/2*x^1*x^6*x \\
& 8 + x^4*x^6*x^8 + 1/2*x^0^2*x^9 + 1/2*x^0*x^1*x^9 + 1/2*x^1^2*x^9 + 1/2*x^0*x^2*x^9 \\
& + x^1*x^2*x^9 - 1/2*x^1*x^4*x^9 + 1/2*x^2*x^4*x^9 + 1/2*x^0^2*x^{10} - 1/2*x^0*x^1*x^{10} \\
& - 1/2*x^0*x^4*x^{10} - 3/2*x^1*x^4*x^{10} + 5*x^0^2 + 10*x^0*x^1 + 5*x^0*x^2 + 10*x^0*x \\
& 4 + 15*x^1*x^4 + 5*x^2*x^4 + 5*x^1*x^6 + 10*x^0*x^8 + 10*x^1*x^8 + 5*x^2*x^8 + 5*x^4 \\
& *x^8 - 5*x^6*x^8 - 5*x^0*x^9 - 5*x^1*x^9 - 5*x^2*x^9 + 5*x^1*x^{10} + 5*x^4*x^{10} - 50* \\
& x^0 - 50*x^1 - 15*x^2 - 50*x^4 - 65/2*x^8 + 35/2*x^9 - 15*x^{10} + 175, \\
& -1/2*x^0^3 + 1/2*x^0^2*x^1 + x^0*x^1^2 + 1/2*x^0*x^1*x^2 + 1/2*x^1^2*x^2 + 1/2*x \\
& 0^2*x^4 + 1/2*x^0*x^1*x^4 + x^1^2*x^4 - 1/2*x^0*x^1*x^6 - 1/2*x^1^2*x^6 - x^1*x^2*x^6 \\
& - 1/2*x^0^2*x^8 - 3/2*x^0*x^1*x^8 - 1/2*x^1^2*x^8 - x^0*x^2*x^8 - 3/2*x^1*x^2*x^8 - \\
& x^0*x^4*x^8 - 1/2*x^1*x^4*x^8 - 1/2*x^2*x^4*x^8 + 1/2*x^0*x^6*x^8 + 1/2*x^1*x^6*x^8 + \\
& x^2*x^6*x^8 - 1/2*x^0^2*x^9 - 1/2*x^0*x^1*x^9 - 1/2*x^1^2*x^9 - 1/2*x^0*x^2*x^9 - x^1 \\
& *x^2*x^9 + 1/2*x^1*x^4*x^9 - 1/2*x^2*x^4*x^9 - 1/2*x^0^2*x^{10} - 3/2*x^0*x^1*x^{10} - x \\
& 1^2*x^{10} - x^0*x^2*x^{10} - 2*x^1*x^2*x^{10} - 1/2*x^0*x^4*x^{10} - 1/2*x^1*x^4*x^{10} - x^2* \\
& x^4*x^{10} + 5*x^0^2 + 5*x^0*x^2 + 10*x^1*x^2 - 5*x^1*x^4 + 5*x^2*x^4 + 5*x^1*x^6 + 10 \\
& *x^0*x^8 + 10*x^1*x^8 + 5*x^2*x^8 + 5*x^4*x^8 - 5*x^6*x^8 + 5*x^0*x^9 + 5*x^1*x^9 + 5 \\
& *x^2*x^9 + 10*x^0*x^{10} + 15*x^1*x^{10} + 10*x^2*x^{10} + 5*x^4*x^{10} - 50*x^0 - 50*x^1 - \\
& 50*x^2 - 15*x^4 - 65/2*x^8 - 35/2*x^9 - 50*x^{10} + 225, \\
& x^0^3 + x^0^2*x^1 + x^0*x^1^2 + x^1^3 - 10*x^0^2 - 10*x^0*x^1 - 10*x^1^2 + 35*x^0 \\
& + 35*x^1 - 50, \\
& x^1*x^4 + x^2*x^4 + x^1*x^6 + x^1*x^8 - x^6*x^8 - x^2*x^9 + x^4*x^9 + x^1*x^{10} + x^4*x^1 \\
& 0 + x^{10}^2 - 10*x^1 - 10*x^4 - 10*x^{10} + 35, \\
& x^0*x^1 + x^1^2 - x^0*x^4 - x^2*x^4 - x^1*x^6 - x^0*x^8 - x^1*x^8 - x^4*x^8 + x^6*x^8 + \\
& x^0*x^9 + x^2*x^9 + x^8*x^9 - x^1*x^{10} - x^4*x^{10} + x^8*x^{10} + x^9*x^{10} + 10*x^4 - 10* \\
& x^9, \\
& x^0*x^4 - x^0*x^9 - x^4*x^9 + x^9^2, \\
& -x^0*x^1 - x^1^2 - x^1*x^4 + x^0*x^8 + x^4*x^8 + x^8^2 + 10*x^1 - 10*x^8, \\
& -x^0^2 - 2*x^0*x^1 - x^1^2 - x^0*x^2 - x^1*x^2 - x^1*x^4 - x^2*x^4 + x^0*x^6 + x^2*x^6 \\
& - x^1*x^8 + x^6*x^8 + x^2*x^9 - x^4*x^9 - x^1*x^{10} + x^2*x^{10} - x^4*x^{10} + x^6*x^{10} + 1 \\
& 0*x^0 + 20*x^1 + 10*x^4 - 10*x^6 - 35, \\
& x^0^2 + x^0*x^1 + x^0*x^2 + x^1*x^2 + x^0*x^4 + x^1*x^4 + 2*x^2*x^4 - x^0*x^6 + x^1*x^6 \\
& + x^0*x^8 + 2*x^1*x^8 + x^2*x^8 + x^4*x^8 - x^6*x^8 - x^0*x^9 - x^2*x^9 + x^4*x^9 + x^6*
\end{aligned}$$

```

x9 + 2*x1*x10 + 2*x4*x10 - 10*x0 - 20*x1 - 10*x2 - 20*x4 - 10*x8 - 10*x
10 + 100,
x0*x1 - x0*x6 - x1*x6 + x6^2,
x0^2 + x0*x1 + x1^2 + x0*x4 + x1*x4 + x4^2 - 10*x0 - 10*x1 - 10*x4 + 3
5,
x0^2 + x0*x1 + x1^2 + x0*x2 + x1*x2 + x2^2 - 10*x0 - 10*x1 - 10*x2 + 3
5,
-x2 - x6 - x8 - x9 - x10 + x15 + 10,
x2 + x6 + x10 + x14 - 10,
-x0 - x4 + x9 + x13,
x0 + x4 + x8 + x12 - 10,
x8 + x9 + x10 + x11 - 10,
-x0 - x1 + x6 + x7,
x0 + x1 + x4 + x5 - 10,
x0 + x1 + x2 + x3 - 10)

```

In [673]: `tuple(slv.G)[3]`

Out[673]: $x_0^4 - 10x_0^3 + 35x_0^2 - 50x_0 + 24$

In [677]: `latex(slv.G)`

Out[677]:
$$\left[-x_0^3 x_1^2 x_2 x_4 - \frac{1}{2} x_0^3 x_1^2 x_2 x_8 - \frac{1}{2} x_0^3 x_1^2 x_4 x_8 + x_0^3 x_1^2 x_6 x_8 + \frac{1}{2} x_0^3 x_1^2 x_2 x_9 - \frac{1}{2} x_0^3 x_1^2 x_4 x_9 - x_0^3 x_1^2 x_4 x_{10} + \frac{5}{2} x_0^3 x_1^2 x_2 + \frac{15}{2} x_0^3 x_1^2 x_4 + 5 x_0^3 x_1 x_2 x_4 + \frac{15}{2} x_0^2 x_1^2 x_2 x_4 - \frac{5}{2} x_0^3 x_1^2 x_6 + \frac{5}{2} x_0^3 x_1 x_2 x_8 + \frac{15}{4} x_0^2 x_1^2 x_2 x_8 + \frac{5}{2} x_0^3 x_1 x_4 x_8 + \frac{15}{4} x_0^2 x_1^2 x_4 x_8 - 5 x_0^3 x_1 x_6 x_8 - \frac{15}{2} x_0^2 x_1^2 x_6 x_8 - \frac{5}{2} x_0^3 x_1 x_2 x_9 - \frac{15}{4} x_0^2 x_1^2 x_2 x_9 + \frac{5}{2} x_0^3 x_1 x_4 x_9 + \frac{15}{4} x_0^2 x_1^2 x_4 x_9 + \frac{5}{2} x_0^3 x_1^2 x_{10} + 5 x_0^3 x_1 x_4 x_{10} + \frac{15}{2} x_0^2 x_1^2 x_4 x_{10} - \frac{24}{9} x_0^3 x_1^2 - \frac{493}{40} x_0^3 x_1 x_2 - \frac{747}{40} x_0^2 x_1^2 x_2 - \frac{1497}{40} x_0^3 x_1 \right]$$

$$\begin{aligned}
& x_4 - \frac{281}{5} x_0^2 x_1^2 x_4 - \frac{19}{5} x_0^3 x_1^2 x_4 - \frac{187}{5} x_0^2 x_1 x_2 x_4 - \frac{327}{20} x_0 x_1^2 x_2 x_4 + \frac{503}{40} x_0^3 x_1 x_6 + \frac{757}{40} x_0^2 x_1^2 x_6 + \frac{1}{8} x_0^3 x_1 x_8 + \frac{1}{8} x_0^2 x_1^2 x_8 - \frac{39}{20} x_0^3 x_2 x_8 - \frac{749}{40} x_0^2 x_1 x_2 x_8 - \frac{163}{20} x_0 x_1^2 x_2 x_8 - \frac{39}{20} x_0^3 x_4 x_8 - \frac{749}{40} x_0^2 x_1 x_4 x_8 - \frac{163}{20} x_0 x_1^2 x_4 x_8 + \frac{3}{40} x_0^2 x_2 x_4 x_8 + \frac{1}{10} x_0 x_1 x_2 x_4 x_8 + \frac{3}{20} x_1^2 x_2 x_4 x_8 + \frac{153}{40} x_0^3 x_6 x_8 + \frac{1499}{40} x_0^2 x_1 x_6 x_8 + \frac{82}{5} x_0 x_1^2 x_6 x_8 + \frac{1}{8} x_0^3 x_1 x_9 + \frac{1}{8} x_0^2 x_1^2 x_9 + \frac{79}{40} x_0^3 x_2 x_9 + \frac{94}{5} x_0^2 x_1 x_2 x_9 + \frac{41}{5} x_0 x_1^2 x_2 x_9 - \frac{37}{20} x_0^3 x_4 x_9 - \frac{747}{40} x_0^2 x_1 x_4 x_9 - \frac{41}{5} x_0 x_1^2 x_4 x_9 + \frac{1}{8} x_0^3 x_2 x_2 x_4 x_9 - \frac{493}{40} x_0^3 x_1 x_{10} - \frac{371}{20} x_0^2 x_1^2 x_{10} - \frac{153}{40} x_0^3 x_4 x_{10} - \frac{1499}{40} x_0^2 x_1 x_4 x_{10} - \frac{82}{5} x_0 x_1^2 x_4 x_{10} + \frac{483}{8} x_0^3 x_1 + \frac{183}{2} x_0^2 x_1^2 + 9 x_0^3 x_2 + \frac{733}{8} x_0^2 x_1 x_2 + \frac{323}{8} x_0 x_1^2 x_2 + \frac{227}{8} x_0^3 x_4 + \frac{2239}{8} x_0^2 x_1 x_4 + \frac{245}{2} x_0 x_1^2 x_4 + \frac{111}{4} x_0^2 x_2 x_4 + 81 x_0 x_1 x_2 x_4 + \frac{37}{4} x_1^2 x_2 x_4 - \frac{39}{4} x_0^3 x_6 - \frac{761}{8} x_0^2 x_1 x_6 - \frac{335}{8} x_0 x_1^2 x_6 - \frac{1}{8} x_0^3 x_8 - \frac{13}{8} x_0^2 x_1 x_8 - \frac{7}{8} x_0 x_1^2 x_8 + \frac{115}{8} x_0^3 x_2 x_8 + \frac{323}{8} x_0 x_1 x_2 x_8 + \frac{35}{8} x_1^2 x_2 x_8 + \frac{115}{8} x_0^2 x_4 x_8 + \frac{323}{8} x_0 x_1 x_4 x_8 + \frac{35}{8} x_1^2 x_4 x_8 - \frac{5}{8} x_0 x_2 x_4 x_8 - x_1 x_2 x_4 x_8 - \frac{229}{8} x_0^2 x_6 x_8 - \frac{655}{8} x_0 x_1 x_6 x_8 - \frac{39}{4} x_1^2 x_6 x_8 - \frac{5}{8} x_0^3 x_9 - \frac{15}{8} x_0^2 x_1 x_9 - \frac{5}{8} x_0 x_1^2 x_9 - \frac{61}{4} x_0^2 x_2 x_9 - \frac{165}{4} x_0 x_1 x_2 x_9 - \frac{39}{8} x_1^2 x_2 x_9 + \frac{107}{8} x_0^2 x_4 x_9 + \frac{325}{8} x_0 x_1 x_4 x_9 + \frac{39}{8} x_1^2 x_9
\end{aligned}$$

$$\begin{aligned}
& \{2\} x_{\{4\}} x_{\{9\}} - \frac{\{5\}\{8\}}{x_{\{0\}} x_{\{2\}} x_{\{4\}} x_{\{9\}}} + \frac{\{73\}\{8\}}{x_{\{0\}}^{\{3\}} x_{\{10\}}} + \frac{\{731\}\{8\}}{x_{\{0\}}^{\{2\}} x_{\{1\}} x_{\{10\}}} + 40 x_{\{0\}} x_{\{1\}}^{\{2\}} x_{\{10\}} + \frac{\{229\}\{8\}}{x_{\{0\}}^{\{2\}} x_{\{4\}} x_{\{10\}}} + \frac{\{655\}\{8\}}{x_{\{0\}} x_{\{1\}} x_{\{4\}} x_{\{10\}}} + \frac{\{39\}\{4\}}{x_{\{1\}}^{\{2\}} x_{\{4\}} x_{\{10\}}} - \frac{\{339\}\{8\}}{x_{\{0\}}^{\{3\}}} - \frac{\{3533\}\{8\}}{x_{\{0\}}^{\{2\}} x_{\{1\}}} - \frac{\{775\}\{4\}}{x_{\{0\}} x_{\{1\}}^{\{2\}}} - \frac{\{259\}\{4\}}{x_{\{0\}}^{\{2\}} x_{\{2\}}} - 196 x_{\{0\}} x_{\{1\}} x_{\{2\}} - \frac{\{89\}\{4\}}{x_{\{1\}}^{\{2\}} x_{\{2\}}} - \frac{\{1679\}\{8\}}{x_{\{0\}}^{\{2\}} x_{\{4\}}} - \frac{\{2431\}\{4\}}{x_{\{0\}} x_{\{1\}} x_{\{4\}}} - \frac{\{285\}\{4\}}{x_{\{1\}}^{\{2\}} x_{\{4\}}} - \frac{\{115\}\{2\}}{x_{\{0\}} x_{\{2\}} x_{\{4\}}} - 45 x_{\{1\}} x_{\{2\}} x_{\{4\}} + \frac{\{147\}\{2\}}{x_{\{0\}}^{\{2\}} x_{\{6\}}} + \frac{\{841\}\{4\}}{x_{\{0\}} x_{\{1\}} x_{\{6\}}} + 25 x_{\{1\}}^{\{2\}} x_{\{6\}} + 2 x_{\{0\}}^{\{2\}} x_{\{8\}} + \frac{\{15\}\{2\}}{x_{\{0\}} x_{\{1\}} x_{\{8\}}} + \frac{\{9\}\{4\}}{x_{\{1\}}^{\{2\}} x_{\{8\}}} - \frac{\{119\}\{4\}}{x_{\{0\}} x_{\{2\}} x_{\{8\}}} - 21 x_{\{1\}} x_{\{2\}} x_{\{8\}} - \frac{\{119\}\{4\}}{x_{\{0\}} x_{\{4\}} x_{\{8\}}} - 21 x_{\{1\}} x_{\{4\}} x_{\{8\}} + \frac{\{7\}\{4\}}{x_{\{2\}} x_{\{4\}} x_{\{8\}}} + \frac{\{249\}\{4\}}{x_{\{0\}} x_{\{6\}} x_{\{8\}}} + \frac{\{97\}\{2\}}{x_{\{1\}} x_{\{6\}} x_{\{8\}}} + \frac{\{27\}\{4\}}{x_{\{0\}}^{\{2\}} x_{\{9\}}} + \frac{\{27\}\{4\}}{x_{\{0\}} x_{\{1\}} x_{\{9\}}} + \frac{\{1\}\{2\}}{x_{\{1\}}^{\{2\}} x_{\{9\}}} + \frac{\{69\}\{2\}}{x_{\{0\}} x_{\{2\}} x_{\{9\}}} + \frac{\{49\}\{2\}}{x_{\{1\}} x_{\{2\}} x_{\{9\}}} - \frac{\{111\}\{4\}}{x_{\{0\}} x_{\{4\}} x_{\{9\}}} - 24 x_{\{1\}} x_{\{4\}} x_{\{9\}} + \frac{\{1\}\{2\}}{x_{\{2\}} x_{\{4\}} x_{\{9\}}} - \frac{\{541\}\{8\}}{x_{\{0\}}^{\{2\}} x_{\{10\}}} - \frac{\{787\}\{4\}}{x_{\{0\}} x_{\{1\}} x_{\{10\}}} - \frac{\{47\}\{2\}}{x_{\{1\}}^{\{2\}} x_{\{10\}}} - \frac{\{249\}\{4\}}{x_{\{0\}} x_{\{4\}} x_{\{10\}}} - \frac{\{97\}\{2\}}{x_{\{1\}} x_{\{4\}} x_{\{10\}}} + \frac{\{2425\}\{8\}}{x_{\{0\}}^{\{2\}}} + \frac{\{3705\}\{4\}}{x_{\{0\}} x_{\{1\}}} + \frac{\{215\}\{2\}}{x_{\{1\}}^{\{2\}}} + 130 x_{\{0\}} x_{\{2\}} + 105 x_{\{1\}} x_{\{2\}} + \frac{\{1785\}\{4\}}{x_{\{0\}} x_{\{4\}}} + 350 x_{\{1\}} x_{\{4\}} + \frac{\{115\}\{4\}}{x_{\{2\}} x_{\{4\}}} - \frac{\{645\}\{4\}}{x_{\{0\}} x_{\{6\}}} - 125 x_{\{1\}} x_{\{6\}} - \frac{\{85\}\{8\}}{x_{\{0\}} x_{\{8\}}} - 15 x_{\{1\}} x_{\{8\}} + \frac{\{105\}\{8\}}{x_{\{2\}} x_{\{8\}}} + \frac{\{105\}\{8\}}{x_{\{4\}} x_{\{8\}}} - \frac{\{145\}\{4\}}{x_{\{6\}} x_{\{8\}}} - \frac{\{165\}\{8\}}{x_{\{0\}} x_{\{9\}}} - 5 x_{\{1\}} x_{\{9\}} - \frac{\{165\}\{8\}}{x_{\{2\}} x_{\{9\}}} + \frac{\{125\}\{8\}}{x_{\{4\}} x_{\{9\}}} + 145 x_{\{0\}} x_{\{10\}} + 115 x_{\{1\}} x_{\{10\}} + \frac{\{145\}\{4\}}{x_{\{4\}} x_{\{10\}}} - \frac{\{12137\}\{20\}}{x_{\{0\}}} - \frac{\{2509\}\{5\}}{x_{\{1\}}} - \frac{\{1173\}\{20\}}{x_{\{2\}}} - \frac{\{4887\}\{20\}}{x_{\{4\}}} + \frac{\{939\}\{10\}}{x_{\{6\}}} + \frac{\{83\}\{4\}}{x_{\{8\}}} + \frac{\{29\}\{2\}}{x_{\{9\}}} - \frac{\{829\}\{10\}}{x_{\{10\}}} + \frac{\{577\}\{2\}}{x_{\{0\}}^{\{3\}} x_{\{1\}}^{\{2\}} x_{\{4\}}} + \frac{\{1\}\{2\}}{x_{\{0\}}^{\{3\}} x_{\{1\}} x_{\{2\}} x_{\{4\}}} - \frac{\{1\}\{3\}}{x_{\{0\}}^{\{3\}} x_{\{1\}}^{\{2\}} x_{\{4\}}} + \frac{\{2\}\{3\}}{x_{\{0\}}^{\{3\}} x_{\{1\}} x_{\{2\}} x_{\{4\}}} - \frac{\{2\}\{3\}}{x_{\{0\}}^{\{2\}} x_{\{1\}}^{\{2\}} x_{\{2\}} x_{\{4\}}} + \frac{\{7\}\{6\}}{x_{\{0\}}^{\{3\}} x_{\{1\}}^{\{2\}} x_{\{6\}}} + \frac{\{5\}\{6\}}{x_{\{0\}}^{\{3\}} x_{\{1\}}^{\{2\}} x_{\{8\}}} + \frac{\{1\}\{6\}}{x_{\{0\}}^{\{3\}} x_{\{1\}} x_{\{2\}} x_{\{8\}}} - \frac{\{1\}\{6\}}{x_{\{0\}}^{\{2\}} x_{\{1\}}^{\{2\}} x_{\{2\}} x_{\{8\}}} + \frac{\{1\}\{6\}}{x_{\{0\}}^{\{3\}} x_{\{1\}} x_{\{4\}} x_{\{8\}}} - \frac{\{1\}\{6\}}{x_{\{0\}}^{\{2\}} x_{\{1\}}^{\{2\}} x_{\{4\}} x_{\{8\}}} + \frac{\{1\}\{2\}}{x_{\{0\}}^{\{3\}} x_{\{2\}} x_{\{4\}} x_{\{8\}}} + \frac{\{2\}\{3\}}{x_{\{0\}}^{\{2\}} x_{\{1\}} x_{\{2\}} x_{\{4\}} x_{\{8\}}} + x_{\{0\}} x_{\{1\}}^{\{2\}} x_{\{2\}} x_{\{4\}} x_{\{8\}} - \frac{\{1\}\{6\}}{x_{\{0\}}^{\{3\}} x_{\{1\}} x_{\{6\}} x_{\{8\}}} + x_{\{0\}}^{\{2\}} x_{\{1\}}^{\{2\}} x_{\{6\}} x_{\{8\}}
\end{aligned}$$

$$\begin{aligned}
& \{8\} + \frac{5}{6} x_0^3 x_1^2 x_9 + \frac{1}{3} x_0^3 x_1 x_2 x_9 + \frac{1}{2} x_0^3 x_1 x_4 x_9 - \frac{1}{2} x_0^2 x_1^2 x_2 x_9 + \frac{5}{6} x_0^3 x_2 x_4 x_9 + \frac{4}{3} x_0^3 x_1^2 x_{10} + \frac{1}{6} x_0^3 x_1 x_4 x_{10} - x_0^2 x_1^2 x_4 x_{10} - \frac{25}{2} x_0^3 x_1^2 - \frac{65}{12} x_0^3 x_1 x_2 - \frac{35}{12} x_0^2 x_1^2 x_2 - \frac{65}{12} x_0^3 x_1 x_4 + \frac{10}{3} x_0^2 x_1^2 x_4 - 5 x_0^3 x_2 x_4 - \frac{10}{3} x_0^2 x_1 x_2 x_4 + \frac{5}{6} x_0 x_1^2 x_2 x_4 - \frac{65}{12} x_0^3 x_1 x_6 - \frac{45}{4} x_0^2 x_1^2 x_6 - \frac{5}{12} x_0^3 x_1 x_8 - \frac{95}{12} x_0^2 x_1^2 x_8 - \frac{5}{3} x_0^3 x_2 x_8 - \frac{25}{12} x_0^2 x_1 x_2 x_8 - \frac{5}{3} x_0^3 x_4 x_8 - \frac{25}{12} x_0^2 x_1 x_4 x_8 - \frac{5}{3} x_0^3 x_1^2 x_4 x_8 - \frac{65}{12} x_0^2 x_2 x_4 x_8 - \frac{25}{3} x_0 x_1 x_2 x_4 x_8 - \frac{5}{2} x_1^2 x_6 x_8 - \frac{15}{4} x_0^2 x_1 x_6 x_8 - 5 x_0 x_1^2 x_6 x_8 - \frac{25}{4} x_0^3 x_1 x_9 - \frac{25}{4} x_0^2 x_1^2 x_9 - \frac{35}{12} x_0^3 x_2 x_9 - 5 x_0^2 x_1 x_2 x_9 - \frac{5}{2} x_0 x_1^2 x_2 x_9 - \frac{10}{3} x_0^3 x_4 x_9 - \frac{5}{4} x_0^2 x_1 x_4 x_9 + \frac{5}{2} x_0 x_1^2 x_4 x_9 - \frac{25}{4} x_0^2 x_2 x_4 x_9 - \frac{85}{12} x_0^3 x_1 x_{10} - \frac{15}{2} x_0^2 x_1^2 x_{10} - \frac{5}{12} x_0^3 x_4 x_{10} + \frac{15}{4} x_0^2 x_1 x_4 x_{10} + 5 x_0 x_1^2 x_4 x_{10} + \frac{895}{12} x_0^3 x_2 + \frac{265}{3} x_0^2 x_1^2 + \frac{55}{3} x_0^3 x_2 + \frac{505}{12} x_0^2 x_1 x_2 + \frac{145}{12} x_0 x_1^2 x_2 + \frac{235}{12} x_0^3 x_4 + \frac{65}{4} x_0^2 x_1 x_4 - \frac{50}{3} x_0 x_1^2 x_4 + \frac{245}{6} x_0^2 x_2 x_4 + \frac{50}{3} x_0 x_1 x_2 x_4 + \frac{35}{6} x_1^2 x_2 x_4 + \frac{5}{2} x_0^3 x_6 + \frac{635}{12} x_0^2 x_1 x_6 + \frac{125}{4} x_0 x_1^2 x_6 + \frac{85}{12} x_0^3 x_8 + \frac{575}{12} x_0^2 x_1 x_8 + \frac{355}{12} x_0 x_1^2 x_8 + \frac{205}{12} x_0^2 x_2 x_8 + \frac{245}{12} x_0 x_1 x_2 x_8 + \frac{85}{12} x_1^2 x_2 x_8 + \frac{205}{12} x_0^2 x_4 x_8 + \frac{245}{12} x_0 x_1 x_4 x_8 + \frac{85}{12} x_1^2 x_4 x_8 + \frac{265}{12} x_
\end{aligned}$$

$$\begin{aligned}
& x_0 x_2 x_4 x_8 + \frac{50}{3} x_1 x_2 x_4 x_8 - \frac{5}{12} x_0^2 x_6 x_8 + \frac{85}{4} x_0 x_1 x_6 x_8 + \frac{5}{2} x_1^2 x_6 x_8 + \frac{55}{4} x_0^3 x_9 + \frac{5}{65} x_0^2 x_1 x_9 + \frac{55}{4} x_0 x_1^2 x_9 + \frac{70}{3} x_0^2 x_2 x_9 + \frac{35}{2} x_0 x_1 x_2 x_9 \\
& + \frac{5}{4} x_1^2 x_2 x_9 + \frac{95}{4} x_0^2 x_4 x_9 - \frac{15}{4} x_0 x_1 x_4 x_9 - \frac{5}{4} x_1^2 x_4 x_9 + \frac{55}{4} x_0 x_2 x_4 x_9 + \frac{65}{12} x_0^3 x_{10} + \frac{165}{4} x_0^2 x_1 x_{10} + 10 x_0 x_1^2 x_{10} \\
& + \frac{5}{12} x_0^2 x_4 x_{10} - \frac{85}{4} x_0 x_1 x_4 x_{10} - \frac{5}{2} x_1^2 x_4 x_{10} - \frac{1175}{12} x_0^3 x_{10} - \frac{6625}{12} x_0^2 x_1 x_{10} - \frac{1225}{6} x_0 x_1^2 x_{10} - \frac{925}{6} x_0^2 x_2 x_{10} - \frac{425}{3} x_0 x_1 x_2 x_{10} \\
& - \frac{175}{6} x_1^2 x_2 x_{10} - \frac{1775}{12} x_0^2 x_4 x_{10} - \frac{25}{2} x_0 x_1 x_4 x_{10} - \frac{25}{2} x_1^2 x_4 x_{10} - \frac{350}{3} x_0 x_2 x_4 x_{10} - 50 x_1 x_2 x_4 x_{10} - 25 x_0^2 x_6 x_{10} - \frac{875}{6} x_0 x_1 x_6 x_{10} \\
& - \frac{50}{3} x_1^2 x_6 x_{10} - 75 x_0^2 x_8 x_{10} - \frac{550}{3} x_0 x_1 x_8 x_{10} - \frac{75}{2} x_1^2 x_8 x_{10} - \frac{200}{3} x_0 x_2 x_8 x_{10} - 50 x_1 x_2 x_8 x_{10} - \frac{20}{3} x_0^3 x_4 x_8 x_{10} - 50 x_1 x_4 x_8 x_{10} - \frac{175}{6} x_2 x_4 x_8 x_{10} \\
& - \frac{25}{6} x_0 x_6 x_8 x_{10} - \frac{25}{3} x_1 x_6 x_8 x_{10} - \frac{625}{6} x_0^2 x_9 x_{10} - \frac{625}{6} x_0 x_1 x_9 x_{10} - \frac{25}{3} x_1^2 x_9 x_{10} - \frac{325}{6} x_0 x_2 x_9 x_{10} - \frac{25}{3} x_1 x_2 x_9 x_{10} - 50 x_0 x_4 x_9 x_{10} - \frac{25}{3} x_2 x_4 x_9 x_{10} \\
& - \frac{425}{12} x_0^2 x_{10} x_{10} - \frac{125}{2} x_0 x_1 x_{10} x_{10} - \frac{25}{3} x_1^2 x_{10} x_{10} + \frac{25}{6} x_0 x_4 x_{10} x_{10} + \frac{25}{3} x_1 x_4 x_{10} x_{10} + \frac{3159}{4} x_0^2 x_{10} x_{10} + \frac{8053}{6} x_0 x_1 x_{10} x_{10} + \frac{601}{3} x_1^2 x_{10} x_{10} + \frac{1327}{3} x_0 x_2 x_{10} x_{10} + 222 x_1 x_2 x_{10} x_{10} + \frac{2351}{6} x_0 x_4 x_{10} x_{10} + \frac{464}{3} x_1 x_4 x_{10} x_{10} + \frac{773}{6} x_2 x_4 x_{10} x_{10} + \frac{127}{2} x_0 x_6 x_{10} x_{10} + \frac{214}{3} x_1 x_6 x_{10} x_{10} + \frac{1095}{4} x_0 x_8 x_{10} x_{10} + 230 x_1 x_8 x_{10} x_{10} + \frac{373}{4} x_2 x_8 x_{10} x_{10} + \frac{373}{4} x_4 x_8 x_{10} x_{10} - \frac{47}{6} x_6 x_8 x_{10} x_{10} + \frac{2785}{12} x_0 x_9 x_{10} x_{10} + \frac{190}{3} x_1 x_9 x_{10} x_{10} + \frac{111}{4} x_2 x_9 x_{10} x_{10} + \frac{427}{12} x_4 x_9 x_{10} x_{10} + \frac{217}{3} x_0 x_{10} x_{10} x_{10} + \frac{166}{3} x_1 x_{10} x_{10} x_{10} + \frac{47}{6} x_4 x_{10} x_{10} x_{10} - \frac{4175}{2} x_0 x_{10} x_{10} x_{10} - \frac{3890}{3} x_1 x_{10} x_{10} x_{10} - \frac{925}{2} x_2 x_{10} x_{10} x_{10} - \frac{935}{2} x_4 x_{10} x_{10} x_{10} - 5 x_6 x_{10} x_{10} x_{10} - \frac{1955}{6} x_8 x_{10} x_{10} x_{10} - \frac{425}{3} x_9 x_{10} x_{10} x_{10} - \frac{235}{3} x_{10} x_{10} x_{10} x_{10} + \frac{5915}{3} x_0^2 x_{10} x_{10} x_{10} + \frac{1}{3} x_0^2 x_{10} x_{10} x_{10} - \frac{1}{3} x_0^3 x_{10} x_{10} x_{10} + \frac{2}{3} x_0^2 x_{10} x_{10} x_{10}
\end{aligned}$$

$$\begin{aligned}
& \{1\} x_{\{2\}} + x_{\{0\}} x_{\{1\}}^{\{2\}} x_{\{2\}} - \frac{\{1\}\{3\}}{x_{\{0\}}^{\{3\}}} x_{\{4\}} + \frac{\{1\}\{3\}}{x_{\{0\}} x_{\{1\}}^{\{2\}} x_{\{4\}}} + \frac{\{2\}\{3\}}{x_{\{0\}}^{\{2\}} x_{\{2\}} x_{\{4\}}} + \frac{\{2\}\{3\}}{x_{\{0\}} x_{\{1\}} x_{\{2\}} x_{\{4\}}} + \frac{\{4\}\{3\}}{x_{\{1\}}^{\{2\}} x_{\{2\}} x_{\{4\}}} - \\
& x_{\{0\}}^{\{3\}} x_{\{6\}} - \frac{\{1\}\{3\}}{x_{\{0\}} x_{\{1\}}^{\{2\}} x_{\{6\}}} - \frac{\{2\}\{3\}}{x_{\{0\}}^{\{3\}} x_{\{8\}}} + \frac{\{1\}\{3\}}{x_{\{0\}}^{\{2\}} x_{\{1\}} x_{\{8\}}} + \frac{\{1\}\{3\}}{x_{\{0\}} x_{\{1\}}^{\{2\}} x_{\{8\}}} - \frac{\{1\}\{3\}}{x_{\{0\}} x_{\{1\}} x_{\{2\}} x_{\{8\}}} + \frac{\{1\}\{3\}}{x_{\{1\}}^{\{2\}} x_{\{2\}} x_{\{8\}}} - \frac{\{1\}\{3\}}{x_{\{0\}} x_{\{1\}} x_{\{4\}} x_{\{8\}}} + \frac{\{1\}\{3\}}{x_{\{1\}}^{\{2\}} x_{\{4\}} x_{\{8\}}} - \\
& x_{\{0\}} x_{\{2\}} x_{\{4\}} x_{\{8\}} - \frac{\{1\}\{3\}}{x_{\{1\}} x_{\{2\}} x_{\{4\}} x_{\{8\}}} - x_{\{0\}}^{\{2\}} x_{\{6\}} x_{\{8\}} - \frac{\{2\}\{3\}}{x_{\{0\}} x_{\{1\}} x_{\{6\}} x_{\{8\}}} - x_{\{1\}}^{\{2\}} x_{\{6\}} x_{\{8\}} - \frac{\{2\}\{3\}}{x_{\{0\}}^{\{3\}} x_{\{9\}}} + \frac{\{1\}\{3\}}{x_{\{0\}}^{\{2\}} x_{\{1\}} x_{\{9\}}} + \frac{\{1\}\{3\}}{x_{\{0\}} x_{\{1\}}^{\{2\}} x_{\{9\}}} - \frac{\{1\}\{3\}}{x_{\{0\}}^{\{2\}} x_{\{2\}} x_{\{9\}}} + \frac{\{1\}\{3\}}{x_{\{0\}} x_{\{1\}} x_{\{2\}} x_{\{9\}}} + \\
& \frac{\{2\}\{3\}}{x_{\{0\}}^{\{2\}} x_{\{4\}} x_{\{9\}}} + x_{\{0\}} x_{\{1\}} x_{\{4\}} x_{\{9\}} + x_{\{1\}}^{\{2\}} x_{\{4\}} x_{\{9\}} + \frac{\{1\}\{3\}}{x_{\{0\}} x_{\{2\}} x_{\{4\}} x_{\{9\}}} + x_{\{1\}} x_{\{2\}} x_{\{4\}} x_{\{9\}} - \\
& x_{\{0\}}^{\{3\}} x_{\{10\}} + \frac{\{2\}\{3\}}{x_{\{0\}}^{\{2\}} x_{\{1\}} x_{\{10\}}} + \frac{\{1\}\{3\}}{x_{\{0\}} x_{\{1\}}^{\{2\}} x_{\{10\}}} + x_{\{0\}}^{\{2\}} x_{\{4\}} x_{\{10\}} + \frac{\{2\}\{3\}}{x_{\{0\}} x_{\{1\}} x_{\{4\}} x_{\{10\}}} + x_{\{1\}}^{\{2\}} x_{\{4\}} x_{\{10\}} + 10 x_{\{0\}}^{\{3\}} - \frac{\{20\}\{3\}}{x_{\{0\}}^{\{2\}} x_{\{1\}}} - \frac{\{20\}\{3\}}{x_{\{0\}} x_{\{1\}}^{\{2\}}} - 10 x_{\{0\}} x_{\{1\}} \\
& x_{\{2\}} - \frac{\{20\}\{3\}}{x_{\{1\}}^{\{2\}} x_{\{2\}}} - \frac{\{10\}\{3\}}{x_{\{0\}}^{\{2\}} x_{\{4\}}} - \frac{\{20\}\{3\}}{x_{\{0\}} x_{\{1\}} x_{\{4\}}} - 10 x_{\{1\}}^{\{2\}} x_{\{4\}} - \frac{\{10\}\{3\}}{x_{\{0\}} x_{\{2\}} x_{\{4\}}} - 10 x_{\{1\}} x_{\{2\}} x_{\{4\}} + 10 x_{\{0\}}^{\{2\}} x_{\{6\}} + \frac{\{10\}\{3\}}{x_{\{0\}} x_{\{1\}} x_{\{6\}}} + \frac{\{10\}\{3\}}{x_{\{1\}}^{\{2\}} x_{\{6\}}} + \frac{\{20\}\{3\}}{x_{\{0\}}^{\{2\}} x_{\{8\}}} + \frac{\{10\}\{3\}}{x_{\{0\}} x_{\{2\}} x_{\{8\}}} + \frac{\{10\}\{3\}}{x_{\{0\}} x_{\{4\}} x_{\{8\}}} + \frac{\{10\}\{3\}}{x_{\{2\}} x_{\{4\}} x_{\{8\}}} + \frac{\{20\}\{3\}}{x_{\{0\}} x_{\{6\}} x_{\{8\}}} + \frac{\{20\}\{3\}}{x_{\{1\}} x_{\{6\}} x_{\{8\}}} + \frac{\{10\}\{3\}}{x_{\{0\}}^{\{2\}} x_{\{9\}}} - \\
& \frac{\{20\}\{3\}}{x_{\{0\}} x_{\{1\}} x_{\{9\}}} - \frac{\{10\}\{3\}}{x_{\{1\}}^{\{2\}} x_{\{9\}}} - \frac{\{10\}\{3\}}{x_{\{1\}} x_{\{2\}} x_{\{9\}}} - \frac{\{20\}\{3\}}{x_{\{0\}} x_{\{4\}} x_{\{9\}}} - 10 x_{\{1\}} x_{\{4\}} x_{\{9\}} - \frac{\{10\}\{3\}}{x_{\{2\}} x_{\{4\}} x_{\{9\}}} + \frac{\{10\}\{3\}}{x_{\{0\}}^{\{2\}} x_{\{10\}}} - \frac{\{20\}\{3\}}{x_{\{0\}} x_{\{1\}} x_{\{10\}}} - \frac{\{10\}\{3\}}{x_{\{1\}}^{\{2\}} x_{\{10\}}} - \frac{\{20\}\{3\}}{x_{\{0\}} x_{\{4\}} x_{\{10\}}} - \frac{\{20\}\{3\}}{x_{\{1\}} x_{\{4\}} x_{\{10\}}} - 5 \\
& 5 x_{\{0\}}^{\{2\}} + \frac{\{200\}\{3\}}{x_{\{0\}} x_{\{1\}}} + \frac{\{100\}\{3\}}{x_{\{1\}}^{\{2\}}} + \frac{\{35\}\{3\}}{x_{\{0\}} x_{\{2\}}} + 45 x_{\{1\}} x_{\{2\}} + \frac{\{100\}\{3\}}{x_{\{0\}} x_{\{4\}}} + \frac{\{200\}\{3\}}{x_{\{1\}} x_{\{4\}}} + \frac{\{40\}\{3\}}{x_{\{2\}} x_{\{4\}}} - 35 x_{\{0\}} x_{\{6\}} - \frac{\{65\}\{3\}}{x_{\{1\}} x_{\{6\}}} - \frac{\{100\}\{3\}}{x_{\{0\}} x_{\{8\}}} - 10 x_{\{1\}} x_{\{8\}} - 10 x_{\{2\}} x_{\{8\}} - 10 x_{\{4\}} x_{\{8\}} - \frac{\{40\}\{3\}}{x_{\{6\}} x_{\{8\}}} + 10 x_{\{0\}} x_{\{9\}} + \frac{\{100\}\{3\}}{x_{\{1\}} x_{\{9\}}} + 10 x_{\{2\}} x_{\{9\}} + \frac{\{70\}\{3\}}{x_{\{4\}} x_{\{9\}}} + 10 x_{\{0\}} x_{\{10\}} + \frac{\{70\}\{3\}}{x_{\{1\}} x_{\{10\}}} + \frac{\{40\}\{3\}}{x_{\{4\}} x_{\{10\}}} + \frac{\{100\}\{3\}}{x_{\{0\}}} - \frac{\{650\}\{3\}}{x_{\{1\}}} - 50 x_{\{2\}} - 100 x_{\{4\}} + 50 x_{\{6\}} + \frac{\{200\}\{3\}}{x_{\{8\}}} - \frac{\{200\}\{3\}}{x_{\{9\}}} - \frac{\{10\}\{3\}}{x_{\{10\}}}
\end{aligned}$$

$$\begin{aligned}
& 0\}^3 x_{10} + \frac{524}{3}, x_0^4 - 10 x_0^3 + 35 x_0^2 - \\
& 50 x_0 + 24, x_0 x_1 x_2 + x_0 x_1 x_4 + x_0 x_2 x_4 \\
& + x_1 x_2 x_4 + x_0 x_1 x_8 + x_0 x_2 x_8 + x_1 \\
& x_2 x_8 + x_0 x_4 x_8 + x_1 x_4 x_8 + x_2 x_4 x_8 \\
& + x_0 x_1 x_{10} + x_0 x_2 x_{10} + x_1 x_2 x_{10} + x_0 \\
& x_4 x_{10} + x_1 x_4 x_{10} + x_2 x_4 x_{10} + x_0 x_8 x_{10} \\
& + x_1 x_8 x_{10} + x_2 x_8 x_{10} + x_4 x_8 x_{10} - 1 \\
& 0 x_0 x_1 - 10 x_0 x_2 - 10 x_1 x_2 - 10 x_0 x_4 - 10 x_1 \\
& x_4 - 10 x_2 x_4 - 10 x_0 x_8 - 10 x_1 x_8 - 10 x_2 \\
& x_8 - 10 x_4 x_8 - 10 x_0 x_{10} - 10 x_1 x_{10} - 10 x_2 \\
& x_{10} - 10 x_4 x_{10} - 10 x_8 x_{10} + 65 x_0 + 65 x_1 + \\
& 65 x_2 + 65 x_4 + 65 x_8 + 65 x_{10} - 350, x_0^3 + x_0^2 \\
& x_1 + x_0 x_1^2 - x_0 x_1 x_2 - x_1^2 x_2 + x_0 \\
& ^2 x_4 + x_1^2 x_4 - x_1 x_2 x_4 + x_0^2 x_8 + x_1^2 \\
& x_8 - x_1 x_2 x_8 - x_0 x_4 x_8 - x_0^2 x_9 - x_0 x_1 x_9 \\
& - x_1^2 x_9 - x_0 x_2 x_9 - x_1 x_2 x_9 - x_2 x_4 x_9 \\
& - x_2 x_8 x_9 + x_4 x_8 x_9 - x_0^2 x_{10} - 2 x_0 x_1 x_{10} \\
& - x_1^2 x_{10} - 2 x_0 x_2 x_{10} - 2 x_1 x_2 x_{10} - x_0 x_4 x_{10} \\
& - x_1 x_4 x_{10} - 2 x_2 x_4 x_{10} - x_0 x_8 x_{10} - x_1 \\
& x_8 x_{10} - 2 x_2 x_8 x_{10} - 10 x_0^2 + 10 x_0 x_2 + 2 \\
& 0 x_1 x_2 + 10 x_2 x_4 + 10 x_2 x_8 + 10 x_0 x_9 + 10 x_1 \\
& x_9 + 10 x_2 x_9 + 20 x_0 x_{10} + 20 x_1 x_{10} + 20 x_2 \\
& x_{10} + 10 x_4 x_{10} + 10 x_8 x_{10} - 30 x_0 - 65 x_1 - \\
& 100 x_2 - 30 x_4 - 30 x_8 - 35 x_9 - 100 x_{10} + 350, -\frac{1}{2} \\
& \frac{1}{2} x_0^3 - \frac{1}{2} x_0^2 x_1 - \frac{1}{2} x_0 x_1 x_2 + \frac{1}{2} x_1^2 x_2 - \frac{1}{2} x_0^2 x_4 - \\
& \frac{1}{2} x_0 x_1 x_4 - x_0 x_2 x_4 - x_1 x_2 x_4 - \frac{1}{2} x_0 x_1 x_6 - \frac{1}{2} x_1^2 x_6 - x_1 \\
& x_4 x_6 - \frac{1}{2} x_0^2 x_8 - \frac{3}{2} x_0 x_1 x_8 - \frac{1}{2} x_1 x_2 x_8 - \frac{1}{2} x_0 x_2 x_8 - \\
& \frac{1}{2} x_1 x_2 x_8 - x_0 x_4 x_8 - \frac{3}{2} x_1 x_4 x_8 - \frac{1}{2} x_2 x_4 x_8 + \frac{1}{2} x_0 x_6 x_8 + \frac{1}{2} \\
& \frac{1}{2} x_1 x_6 x_8 + x_4 x_6 x_8 + \frac{1}{2} x_0^2 x_9 + \frac{1}{2} x_0 x_1 x_9 + \frac{1}{2} x_1^2 x_9 + \frac{1}{2} \\
& \frac{1}{2} x_0 x_2 x_9 + x_1 x_2 x_9 - \frac{1}{2} x_1 x_4 x_9 + \frac{1}{2} x_2 x_4 x_9 + \frac{1}{2} x_0^2 x_{10} \\
& - \frac{1}{2} x_0 x_1 x_{10} - \frac{1}{2} x_0 x_4 x_{10} - \frac{3}{2} x_1 x_4 x_{10} + 5 x_0^2 + 10 x_0 x_1 + 5 x_0
\end{aligned}$$

$$\begin{aligned}
& x_{\{2\}} + 10 x_{\{0\}} x_{\{4\}} + 15 x_{\{1\}} x_{\{4\}} + 5 x_{\{2\}} x_{\{4\}} + 5 x_{\{1\}} x_{\{6\}} \\
& + 10 x_{\{0\}} x_{\{8\}} + 10 x_{\{1\}} x_{\{8\}} + 5 x_{\{2\}} x_{\{8\}} + 5 x_{\{4\}} x_{\{8\}} - 5 x_{\{6\}} x_{\{8\}} - 5 x_{\{0\}} x_{\{9\}} - 5 x_{\{1\}} x_{\{9\}} - 5 x_{\{2\}} x_{\{9\}} + 5 x_{\{1\}} x_{\{10\}} \\
& + 5 x_{\{4\}} x_{\{10\}} - 50 x_{\{0\}} - 50 x_{\{1\}} - 15 x_{\{2\}} - 50 x_{\{4\}} - \frac{65}{2} x_{\{8\}} + \frac{35}{2} x_{\{9\}} - 15 x_{\{10\}} + 175, -\frac{1}{2} x_{\{0\}}^3 \\
& + \frac{1}{2} x_{\{0\}}^2 x_{\{1\}} + x_{\{0\}} x_{\{1\}}^2 + \frac{1}{2} x_{\{0\}} x_{\{1\}} x_{\{2\}} + \frac{1}{2} x_{\{1\}}^2 x_{\{2\}} + \frac{1}{2} x_{\{0\}}^2 x_{\{4\}} \\
& + \frac{1}{2} x_{\{0\}} x_{\{1\}} x_{\{4\}} + x_{\{1\}}^2 x_{\{4\}} - \frac{1}{2} x_{\{0\}} x_{\{1\}} x_{\{6\}} - \frac{1}{2} x_{\{1\}}^2 x_{\{6\}} - x_{\{1\}} x_{\{2\}} x_{\{6\}} - \\
& \frac{1}{2} x_{\{0\}}^2 x_{\{8\}} - \frac{3}{2} x_{\{0\}} x_{\{1\}} x_{\{8\}} - \frac{1}{2} x_{\{2\}} x_{\{1\}}^2 x_{\{8\}} - x_{\{0\}} x_{\{2\}} x_{\{8\}} - \frac{3}{2} x_{\{1\}} x_{\{2\}} x_{\{8\}} \\
& - x_{\{0\}} x_{\{4\}} x_{\{8\}} - \frac{1}{2} x_{\{1\}} x_{\{4\}} x_{\{8\}} - \frac{1}{2} x_{\{2\}} x_{\{4\}} x_{\{8\}} + \frac{1}{2} x_{\{0\}} x_{\{6\}} x_{\{8\}} + \frac{1}{2} x_{\{1\}} x_{\{6\}} x_{\{8\}} \\
& + x_{\{2\}} x_{\{6\}} x_{\{8\}} - \frac{1}{2} x_{\{0\}}^2 x_{\{9\}} - \frac{1}{2} x_{\{2\}} x_{\{0\}} x_{\{1\}} x_{\{9\}} - \frac{1}{2} x_{\{1\}}^2 x_{\{9\}} - \frac{1}{2} x_{\{0\}} x_{\{2\}} x_{\{9\}} \\
& - x_{\{1\}} x_{\{2\}} x_{\{9\}} + \frac{1}{2} x_{\{1\}} x_{\{4\}} x_{\{9\}} - \frac{1}{2} x_{\{2\}} x_{\{4\}} x_{\{9\}} - \frac{1}{2} x_{\{0\}}^2 x_{\{10\}} - \frac{3}{2} x_{\{0\}} x_{\{1\}} x_{\{10\}} \\
& - x_{\{1\}}^2 x_{\{10\}} - x_{\{0\}} x_{\{2\}} x_{\{10\}} - 2 x_{\{1\}} x_{\{2\}} x_{\{10\}} - \frac{1}{2} x_{\{0\}} x_{\{4\}} x_{\{10\}} - \frac{1}{2} x_{\{1\}} x_{\{4\}} x_{\{10\}} \\
& - x_{\{2\}} x_{\{4\}} x_{\{10\}} + 5 x_{\{0\}}^2 + 5 x_{\{0\}} x_{\{2\}} + 10 x_{\{1\}} x_{\{2\}} - 5 x_{\{1\}} x_{\{4\}} + 5 x_{\{2\}} x_{\{4\}} + 5 x_{\{1\}} x_{\{6\}} + 10 x_{\{0\}} x_{\{8\}} + 10 x_{\{1\}} x_{\{8\}} \\
& + 5 x_{\{2\}} x_{\{8\}} + 5 x_{\{4\}} x_{\{8\}} - 5 x_{\{6\}} x_{\{8\}} + 5 x_{\{0\}} x_{\{9\}} + 5 x_{\{1\}} x_{\{9\}} + 5 x_{\{2\}} x_{\{9\}} + 10 x_{\{0\}} x_{\{10\}} + 15 x_{\{1\}} x_{\{10\}} \\
& + 10 x_{\{2\}} x_{\{10\}} + 5 x_{\{4\}} x_{\{10\}} - 50 x_{\{0\}} - 50 x_{\{1\}} - 50 x_{\{2\}} - 15 x_{\{4\}} - \frac{65}{2} x_{\{8\}} - \frac{35}{2} x_{\{9\}} - 50 x_{\{10\}} + 225, \\
& x_{\{0\}}^3 + x_{\{0\}}^2 x_{\{1\}} + x_{\{0\}} x_{\{1\}}^2 + x_{\{1\}}^3 - 10 x_{\{0\}}^2 - 10 x_{\{0\}} x_{\{1\}} - 10 x_{\{1\}}^2 + 35 x_{\{0\}} + 35 x_{\{1\}} - 50, x_{\{1\}} x_{\{4\}} \\
& + x_{\{2\}} x_{\{4\}} + x_{\{1\}} x_{\{6\}} + x_{\{1\}} x_{\{8\}} - x_{\{6\}} x_{\{8\}} - x_{\{2\}} x_{\{9\}} + x_{\{4\}} x_{\{9\}} + x_{\{1\}} x_{\{10\}} + x_{\{4\}} x_{\{10\}} + x_{\{10\}}^2 - 10 x_{\{1\}} \\
& - 10 x_{\{4\}} - 10 x_{\{10\}} + 35, x_{\{0\}} x_{\{1\}} + x_{\{1\}}^2 - x_{\{0\}} x_{\{4\}} - x_{\{2\}} x_{\{4\}} - x_{\{1\}} x_{\{6\}} - x_{\{0\}} x_{\{8\}} - x_{\{1\}} x_{\{8\}} - x_{\{4\}} x_{\{8\}} \\
& + x_{\{6\}} x_{\{8\}} + x_{\{0\}} x_{\{9\}} + x_{\{2\}} x_{\{9\}} + x_{\{8\}} x_{\{9\}} - x_{\{1\}} x_{\{10\}} - x_{\{4\}} x_{\{10\}} + x_{\{8\}} x_{\{10\}} + x_{\{9\}} x_{\{10\}} + 10 x_{\{4\}} - 10 x_{\{9\}}, \\
& x_{\{0\}} x_{\{4\}} - x_{\{0\}} x_{\{9\}} - x_{\{4\}} x_{\{9\}} + x_{\{9\}}^2, - x_{\{0\}} x_{\{1\}} - x_{\{1\}}^2 - x_{\{1\}} x_{\{4\}} + x_{\{0\}} x_{\{8\}} + x_{\{4\}} x_{\{8\}} + x_{\{8\}}^2 \\
& + 10 x_{\{1\}} - 10 x_{\{8\}}, - x_{\{0\}}^2 - 2 x_{\{0\}} x_{\{1\}} - x_{\{1\}}^2 - x_{\{0\}} x_{\{2\}} - x_{\{1\}} x_{\{2\}} - x_{\{1\}} x_{\{4\}} - x_{\{2\}} x_{\{4\}} + x_{\{0\}} x_{\{6\}} \\
& + x_{\{2\}} x_{\{6\}} - x_{\{1\}} x_{\{8\}} + x_{\{6\}} x_{\{8\}} + x_{\{2\}} x_{\{9\}} - x_{\{4\}} x_{\{9\}} - x_{\{1\}} x_{\{10\}} + x_{\{2\}} x_{\{10\}} - x_{\{4\}} x_{\{10\}} + x_{\{6\}} x_{\{10\}} + 10 x_{\{0\}}
\end{aligned}$$

```

{0} + 20 x_{1} + 10 x_{4} - 10 x_{6} - 35, x_{0}^{2} + x_{0} x_{1} + x_{0}
x_{2} + x_{1} x_{2} + x_{0} x_{4} + x_{1} x_{4} + 2 x_{2} x_{4} -
x_{0} x_{6} + x_{1} x_{6} + x_{0} x_{8} + 2 x_{1} x_{8} + x_{2} x_{8} +
x_{4} x_{8} - x_{6} x_{8} - x_{0} x_{9} - x_{2} x_{9} + x_{4} x_{9}
+ x_{6} x_{9} + 2 x_{1} x_{10} + 2 x_{4} x_{10} - 10 x_{0} - 20 x_{1} -
10 x_{2} - 20 x_{4} - 10 x_{8} - 10 x_{10} + 100, x_{0} x_{1} - x_{0}
x_{6} - x_{1} x_{6} + x_{6}^{2}, x_{0}^{2} + x_{0} x_{1} + x_{1}^{2} +
x_{0} x_{4} + x_{1} x_{4} + x_{4}^{2} - 10 x_{0} - 10 x_{1} - 10 x_{4}
+ 35, x_{0}^{2} + x_{0} x_{1} + x_{1}^{2} + x_{0} x_{2} + x_{1} x_{2} +
x_{2}^{2} - 10 x_{0} - 10 x_{1} - 10 x_{2} + 35, - x_{2} - x_{6} - x_{8}
- x_{9} - x_{10} + x_{15} + 10, x_{2} + x_{6} + x_{10} + x_{14} -
10, - x_{0} - x_{4} + x_{9} + x_{13}, x_{0} + x_{4} + x_{8} + x_{12} -
10, x_{8} + x_{9} + x_{10} + x_{11} - 10, - x_{0} - x_{1} + x_{6} + x_{7},
x_{0} + x_{1} + x_{4} + x_{5} - 10, x_{0} + x_{1} + x_{2} + x_{3}
- 10\right]

```

In [26]: slv.sol

```

Out[26]: {x15: 2,
x14: 3,
x13: 4,
x12: 1,
x11: 1,
x10: 4,
x9: 3,
x8: 2,
x7: 3,
x6: 2,
x5: 1,
x4: 4,
x3: 4,
x2: 1,
x1: 2,
x0: 3}

```