表 1 
$$\operatorname{rank} 0$$

No.	expression
1	1

## 表 2 rank 1

No.	expression
2	Z
3	-Y
4	X

表 3 rank 2

No.	expression
5	$-\frac{X^2}{2} - \frac{Y^2}{2} + Z^2$
6	$\sqrt{3}XZ$
7	$\sqrt{3}YZ$
8	$\sqrt{3}XY$
9	$\frac{\sqrt{3}(X-Y)(X+Y)}{2}$

表 4 rank 3

No.	expression
10	$-\frac{Z(3X^2+3Y^2-2Z^2)}{2}$
11	$\frac{\sqrt{10}Y\left(3X^2-Y^2\right)}{4}$
12	$\frac{\sqrt{10}X(X^2-3Y^2)}{4}$
13	$\frac{\sqrt{6}Y(X^2+Y^2-4Z^2)}{4}$
14	$-\frac{\sqrt{6}X(X^2+Y^2-4Z^2)}{4}$
15	$\frac{\sqrt{15}Z(X-Y)(X+Y)}{2}$
16	$-\sqrt{15}XYZ$

表 5 rank 4

No.	expression
17	$\frac{3X^4}{8} + \frac{3X^2Y^2}{4} - 3X^2Z^2 + \frac{3Y^4}{8} - 3Y^2Z^2 + Z^4$
18	$\frac{\sqrt{70}XZ\left(X^2 - 3Y^2\right)}{4}$
19	$\frac{\sqrt{70}YZ(3X^2 - Y^2)}{4}$
20	$-\frac{\sqrt{10}XZ\left(3X^2+3Y^2-4Z^2\right)}{4}$
21	$-\frac{\sqrt{10}YZ\left(3X^2+3Y^2-4Z^2\right)}{4}$
22	$-\frac{\sqrt{35}XY(X-Y)(X+Y)}{2}$
23	$\frac{\sqrt{35}(X^2 - 2XY - Y^2)(X^2 + 2XY - Y^2)}{8}$
24	$-\frac{\sqrt{5}XY\left(X^2+Y^2-6Z^2\right)}{2}$
25	$-\frac{\sqrt{5}(X-Y)(X+Y)\left(X^2+Y^2-6Z^2\right)}{4}$

表 6 rank 5

No.	expression
26	$\frac{Z(15X^4 + 30X^2Y^2 - 40X^2Z^2 + 15Y^4 - 40Y^2Z^2 + 8Z^4)}{8}$
27	$-\frac{\sqrt{70}Y(3X^2-Y^2)(X^2+Y^2-8Z^2)}{16}$
28	$-\frac{\sqrt{70}X\left(X^2-3Y^2\right)\left(X^2+Y^2-8Z^2\right)}{16}$
29	$\frac{3\sqrt{14}Y\left(5X^4 - 10X^2Y^2 + Y^4\right)}{16}$
30	$\frac{3\sqrt{14}X\left(X^4 - 10X^2Y^2 + 5Y^4\right)}{16}$
31	$-\frac{\sqrt{15}Y \left(X^4+2 X^2 Y^2-12 X^2 Z^2+Y^4-12 Y^2 Z^2+8 Z^4\right)}{8}$
32	$\frac{\sqrt{15}X \left(X^4 + 2X^2Y^2 - 12X^2Z^2 + Y^4 - 12Y^2Z^2 + 8Z^4\right)}{8}$
33	$\frac{3\sqrt{35}Z\!\left(X^2\!-\!2XY\!-\!Y^2\right)\!\left(X^2\!+\!2XY\!-\!Y^2\right)}{8}$
34	$\frac{3\sqrt{35}XYZ(X-Y)(X+Y)}{2}$
35	$-\frac{\sqrt{105}Z(X\!-\!Y)(X\!+\!Y)\!\left(X^2\!+\!Y^2\!-\!2Z^2\right)}{4}$
36	$\frac{\sqrt{105}XYZ(X^2+Y^2-2Z^2)}{2}$

```
No. expression
         -\frac{5X^6}{16} - \frac{15X^4Y^2}{16} + \frac{45X^4Z^2}{8} - \frac{15X^2Y^4}{16} + \frac{45X^2Y^2Z^2}{4} - \frac{15X^2Z^4}{2} - \frac{5Y^6}{16} + \frac{45Y^4Z^2}{8} - \frac{15Y^2Z^4}{2} + Z^6
          \sqrt{462}(X-Y)(X+Y)(X^2-4XY+Y^2)(X^2+4XY+Y^2)
          \sqrt{462}XY(X^2-3Y^2)(3X^2-Y^2)
 39
             \sqrt{210}XZ(X^2-3Y^2)(3X^2+3Y^2-8Z^2)
 40
             \frac{\sqrt{210}YZ(3X^2 - Y^2)(3X^2 + 3Y^2 - 8Z^2)}{\sqrt{210}YZ(3X^2 - Y^2)(3X^2 + 3Y^2 - 8Z^2)}
          3\sqrt{154}XZ(X^4-10X^2Y^2+5Y^4)
             3\sqrt{154}YZ(5X^4-10X^2Y^2+Y^4)
 43
          \sqrt{21}XZ(5X^4+10X^2Y^2-20X^2Z^2+5Y^4-20Y^2Z^2+8Z^4)
          \sqrt{21}YZ \left(5X^4 + 10X^2Y^2 - 20X^2Z^2 + 5Y^4 - 20Y^2Z^2 + 8Z^4\right)
          3\sqrt{7}XY(X-Y)(X+Y)(X^2+Y^2-10Z^2)
            \frac{3\sqrt{7}(X^2+Y^2-10Z^2)(X^2-2XY-Y^2)(X^2+2XY-Y^2)}{4}
          \frac{16}{\sqrt{210}XY\left(X^4+2X^2Y^2-16X^2Z^2+Y^4-16Y^2Z^2+16Z^4\right)}
          \frac{\sqrt{210}(X-Y)(X+Y)\left(X^4+2X^2Y^2-16X^2Z^2+Y^4-16Y^2Z^2+16Z^4\right)}{32}
 49
```

表 8 rank 7

No.	expression
50	$\frac{\sqrt{6006}XYZ(X^2-3Y^2)(3X^2-Y^2)}{16}$
51	$-\frac{Z\big(35X^6+105X^4Y^2-210X^4Z^2+105X^2Y^4-420X^2Y^2Z^2+168X^2Z^4+35Y^6-210Y^4Z^2+168Y^2Z^4-16Z^6\big)}{16Z^2}$
52	$\sqrt{6006}Z(X-Y)(X+Y)(X^2-4XY+Y^2)(X^2+4XY+Y^2)$
53	$\frac{32}{\sqrt{21}Y(3X^2 - Y^2)(3X^4 + 6X^2Y^2 - 60X^2Z^2 + 3Y^4 - 60Y^2Z^2 + 80Z^4)}$
54	$\frac{32}{\sqrt{21}X(X^2-3Y^2)(3X^4+6X^2Y^2-60X^2Z^2+3Y^4-60Y^2Z^2+80Z^4)}$
	$\frac{32}{\sqrt{429}Y\left(7X^6 - 35X^4Y^2 + 21X^2Y^4 - Y^6\right)}$
55	$\frac{32}{\sqrt{429}X(X^6-21X^4Y^2+35X^2Y^4-7Y^6)}$
56	$-\frac{\sqrt{231}Y(X^2+Y^2-12Z^2)(5X^4-10X^2Y^2+Y^4)}{232}$
57	32
58	$-\frac{\sqrt{231}X\left(X^2+Y^2-12Z^2\right)\left(X^4-10X^2Y^2+5Y^4\right)}{32}$
59	$\frac{\sqrt{7}Y\left(5X^{6}+15X^{4}Y^{2}-120X^{4}Z^{2}+15X^{2}Y^{4}-240X^{2}Y^{2}Z^{2}+240X^{2}Z^{4}+5Y^{6}-120Y^{4}Z^{2}+240Y^{2}Z^{4}-64Z^{6}\right)}{32}$
60	$-\frac{\sqrt{7}X \left(5 X^6+15 X^4 Y^2-120 X^4 Z^2+15 X^2 Y^4-240 X^2 Y^2 Z^2+240 X^2 Z^4+5 Y^6-120 Y^4 Z^2+240 Y^2 Z^4-64 Z^6\right)}{32}$
61	$-\frac{\sqrt{231}Z\left(X^2-2XY-Y^2\right)\left(X^2+2XY-Y^2\right)\left(3X^2+3Y^2-10Z^2\right)}{16}$
62	$-\frac{\sqrt{231}XYZ(X-Y)(X+Y)\left(3X^2+3Y^2-10Z^2\right)}{4}$
63	$\frac{\sqrt{42}Z(X-Y)(X+Y)\left(15X^4+30X^2Y^2-80X^2Z^2+15Y^4-80Y^2Z^2+48Z^4\right)}{32}$
64	$-\frac{\sqrt{42}XYZ\left(15X^4+30X^2Y^2-80X^2Z^2+15Y^4-80Y^2Z^2+48Z^4\right)}{16}$

表 9 rank 8

```
No. expression
                                         \frac{35X^8}{128} + \frac{35X^6Y^2}{32} - \frac{35X^6Z^2}{4} + \frac{105X^4Y^4}{64} - \frac{105X^4Y^2Z^2}{4} + \frac{105X^4Z^4}{4} + \frac{35X^2Y^6}{32} - \frac{105X^2Y^4Z^2}{4} + \frac{105X^2Y^2Z^4}{2} - 14X^2Z^6 + \frac{35Y^8}{128} - \frac{35Y^6Z^2}{4} + \frac{105Y^4Z^4}{4} - 14Y^2Z^6 + Z^8 - \frac{105X^2Y^4Z^2}{4} - \frac{105X^2Y^4Z^2}{4} - \frac{105X^2Y^2Z^4}{4} - \frac{105X^2Y^2Z^4}{4} - \frac{105X^2Z^2Z^4}{4} - \frac{105X^2Z^2Z^4}{4} - \frac{105X^2Z^2Z^4}{4} - \frac{105X^2Z^2Z^4}{4} - \frac{105X^2Z^2Z^4}{4} - \frac{105X^2Z^2Z^4}{4} - \frac{105Z^2Z^2Z^4}{4} - \frac{105Z^2Z^2}{4} - \frac{105Z^2Z^2Z^4}{4} - \frac{105Z^2Z^2Z^2}{4} - \frac{105Z^2Z^2Z^2}{4} - \frac{105Z^2Z^2Z^2}{4} - \frac{105Z^2Z^2Z^2}{4} - \frac{105Z^2Z^2}{4} - \frac{105Z^2Z^2}{4} - \frac{105Z^2Z^2}{4} - \frac{
    65
                                                          \frac{\sqrt{858}XY(X^2-3Y^2)(3X^2-Y^2)(X^2+Y^2-14Z^2)}{32}
    67
                                               \frac{\sqrt{1155}XZ\big(X^2-3Y^2\big)\big(3X^4+6X^2Y^2-20X^2Z^2+3Y^4-20Y^2Z^2+16Z^4\big)}{32}
    68
                                               \frac{\sqrt{1155}YZ\big(3X^2-Y^2\big)\big(3X^4+6X^2Y^2-20X^2Z^2+3Y^4-20Y^2Z^2+16Z^4\big)}{32}
    69
                                            \frac{3\sqrt{715}XZ(X^6 - 21X^4Y^2 + 35X^2Y^4 - 7Y^6)}{2}
    70
                                         \frac{3\sqrt{715}XZ\left(X^{2}-21X^{4}+53X^{4}-71Y\right)}{32}
\frac{3\sqrt{715}YZ\left(7X^{6}-35X^{4}Y^{2}+21X^{2}Y^{4}-Y^{6}\right)}{32}
-\frac{3\sqrt{1001}XZ\left(X^{2}+Y^{2}-4Z^{2}\right)\left(X^{4}-10X^{2}Y^{2}+5Y^{4}\right)}{32}
\frac{3\sqrt{1001}YZ\left(X^{2}+Y^{2}-4Z^{2}\right)\left(5X^{4}-10X^{2}Y^{2}+Y^{4}\right)}{32}
      71
      72
        73
                                                      -\frac{3XZ \left(35X^{6}+105X^{4}Y^{2}-280X^{4}Z^{2}+105X^{2}Y^{4}-560X^{2}Y^{2}Z^{2}+336X^{2}Z^{4}+35Y^{6}-280Y^{4}Z^{2}+336Y^{2}Z^{4}-64Z^{6}\right)}{32}
      74
                                                         3YZ \left(35X^{6} + 105X^{4}Y^{2} - 280X^{4}Z^{2} + 105X^{2}Y^{4} - 560X^{2}Y^{2}Z^{2} + 336X^{2}Z^{4} + 35Y^{6} - 280Y^{4}Z^{2} + 336Y^{2}Z^{4} - 64Z^{6}\right)
      75
                                            \frac{3\sqrt{715}XY(X-Y)(X+Y)\left(X^2-2XY-Y^2\right)\left(X^2+2XY-Y^2\right)}{16}
\frac{3\sqrt{715}\left(X^4-4X^3Y-6X^2Y^2+4XY^3+Y^4\right)\left(X^4+4X^3Y-6X^2Y^2-4XY^3+Y^4\right)}{128}
        76
      77
                                                      \frac{3\sqrt{77}XY(X-Y)(X+Y)\left(X^4+2X^2Y^2-24X^2Z^2+Y^4-24Y^2Z^2+40Z^4\right)}{2}
        78
                                            \frac{3\sqrt{77}\big(X^2 - 2XY - Y^2\big)\big(X^2 + 2XY - Y^2\big)\big(X^4 + 2X^2Y^2 - 24X^2Z^2 + Y^4 - 24Y^2Z^2 + 40Z^4\big)}{64} \\ -\frac{3\sqrt{70}XY\big(X^6 + 3X^4Y^2 - 30X^4Z^2 + 3X^2Y^4 - 60X^2Y^2Z^2 + 80X^2Z^4 + Y^6 - 30Y^4Z^2 + 80Y^2Z^4 - 32Z^6\big)}{32} \\ -\frac{3\sqrt{70}XY\big(X^6 + 3X^4Y^2 - 30X^4Z^2 + 3X^2Y^4 - 60X^2Y^2Z^2 + 80X^2Z^4 + Y^6 - 30Y^4Z^2 + 80Y^2Z^4 - 32Z^6\big)}{32} \\ -\frac{3\sqrt{70}XY\big(X^6 + 3X^4Y^2 - 30X^4Z^2 + 80X^2Z^4 + Y^6 - 30Y^4Z^2 + 80Y^2Z^4 - 32Z^6\big)}{32} \\ -\frac{3\sqrt{70}XY\big(X^6 + 3X^4Y^2 - 30X^4Z^2 + 80X^2Z^4 + Y^6 - 30Y^4Z^2 + 80Y^2Z^4 - 32Z^6\big)}{32} \\ -\frac{3\sqrt{70}XY\big(X^6 + 3X^4Y^2 - 30X^4Z^2 + 3X^2Y^4 - 80X^2Z^4 + Y^6 - 30Y^4Z^2 + 80Y^2Z^4 - 32Z^6\big)}{32} \\ -\frac{3\sqrt{70}XY\big(X^6 + 3X^4Y^2 - 30X^4Z^2 + 3X^2Y^4 - 80X^2Z^4 + Y^6 - 30Y^4Z^2 + 80Y^2Z^4 - 32Z^6\big)}{32} \\ -\frac{3\sqrt{70}XY\big(X^6 + 3X^4Y^2 - 30X^4Z^2 + 3X^2Y^4 - 80X^2Z^4 + Y^6 - 30Y^4Z^2 + 80Y^2Z^4 - 32Z^6\big)}{32} \\ -\frac{3\sqrt{70}XY\big(X^6 + 3X^4Y^2 - 30X^4Z^2 + 3X^2Y^4 - 80X^2Z^4 + Y^6 - 30Y^4Z^2 + 80Y^2Z^4 - 32Z^6\big)}{32} \\ -\frac{3\sqrt{70}XY\big(X^6 + 3X^4Y^2 - 30X^4Z^2 + 3X^2Y^4 - 80X^2Z^4 + Y^6 - 30Y^4Z^2 + 80Y^2Z^4 - 32Z^6\big)}{32} \\ -\frac{3\sqrt{70}XY\big(X^6 + 3X^4Y^2 - 30X^4Z^2 + 3X^2Y^4 - 80X^2Z^4 + Y^6 - 30Y^4Z^2 + 80Y^2Z^4 - 32Z^6\big)}{32} \\ -\frac{3\sqrt{70}XY\big(X^6 + 3X^4Y^2 - 30X^4Z^2 + 3X^2Y^4 - 80X^2Z^4 + Y^6 - 30Y^4Z^2 + 80Y^2Z^4 - 32Z^6\big)}{32} \\ -\frac{3\sqrt{70}XY\big(X^6 + 3X^4Y^2 - 30X^4Z^2 + 3X^2Y^4 - 80X^2Z^4 + Y^6 - 30Y^4Z^2 + 80Y^2Z^4 - 32Z^6\big)}{32} \\ -\frac{3\sqrt{70}XY\big(X^6 + 3X^4Y^2 - 30X^4Z^2 + 3X^2Y^4 - 80X^2Z^4 + Y^6 - 30Y^4Z^2 + 80Z^2 + Y^6 - 30Y^4Z^2 + 3Z^2 + Y^6 - 30Y^4Z^2 + 3Z^2 + Y^6 - 30Y^4Z^2 + 3Z^2 + Y^6 - Z^2 + Y^6 - Z^2 + Y^6 - Z^2 + Y^6 - Z^2 + Z
        79
                                               -\frac{3\sqrt{70}(X-Y)(X+Y)\left(X^{6}+3X^{4}Y^{2}-30X^{4}Z^{2}+3X^{2}Y^{4}-60X^{2}Y^{2}Z^{2}+80X^{2}Z^{4}+Y^{6}-30Y^{4}Z^{2}+80Y^{2}Z^{4}-32Z^{6}\right)}{64}
    81
```

## 表 10 rank 9

```
expression
No.
            \sqrt{4290}XYZ(X^2-3Y^2)(3X^2-Y^2)(3X^2+3Y^2-14Z^2)
82
          Z\big(315X^8 + 1260X^6Y^2 - 3360X^6Z^2 + 1890X^4Y^4 - 10080X^4Y^2Z^2 + 6048X^4Z^4 + 1260X^2Y^6 - 10080X^2Y^4Z^2 + 12096X^2Y^2Z^4 - 2304X^2Z^6 + 315Y^8 - 3360Y^6Z^2 + 6048Y^4Z^4 - 2304Y^2Z^6 + 128Z^8\big)
             \frac{\sqrt{4290}Z(X-Y)(X+Y)\left(X^2-4XY+Y^2\right)\left(X^2+4XY+Y^2\right)\left(3X^2+3Y^2-14Z^2\right)}{4290}Z(X-Y)(X+Y)\left(X^2-4XY+Y^2\right)\left(X^2+4XY+Y^2\right)\left(3X^2+3Y^2-14Z^2\right)
84
           \sqrt{24310}Y(3X^2-Y^2)(3X^6-27X^4Y^2+33X^2Y^4-Y^6)
 85
             \sqrt{2310}Y \left(3X^2 - Y^2\right) \left(X^6 + 3X^4Y^2 - 36X^4Z^2 + 3X^2Y^4 - 72X^2Y^2Z^2 + 120X^2Z^4 + Y^6 - 36Y^4Z^2 + 120Y^2Z^4 - 64Z^6\right)
86
           \sqrt{24310}X(X^2-3Y^2)(X^6-33X^4Y^2+27X^2Y^4-3Y^6)
87
             \frac{256}{\sqrt{2310}X(X^2-3Y^2)(X^6+3X^4Y^2-36X^4Z^2+3X^2Y^4-72X^2Y^2Z^2+120X^2Z^4+Y^6-36Y^4Z^2+120Y^2Z^4-64Z^6)}
88
          3\sqrt{1430}Y\left(X^2+Y^2-16Z^2\right)\left(7X^6-35X^4Y^2+21X^2Y^4-Y^6\right)
89
             3\sqrt{1430}X(X^2+Y^2-16Z^2)(X^6-21X^4Y^2+35X^2Y^4-7Y^6)
90
          3\sqrt{286}Y\left(5X^4 - 10X^2Y^2 + Y^4\right)\left(X^4 + 2X^2Y^2 - 28X^2Z^2 + Y^4 - 28Y^2Z^2 + 56Z^4\right)
91
          3\sqrt{286}X \Big(X^4 - 10X^2Y^2 + 5Y^4\Big) \Big(X^4 + 2X^2Y^2 - 28X^2Z^2 + Y^4 - 28Y^2Z^2 + 56Z^4\Big)
92
             3\sqrt{5}Y \left(7X^8 + 28X^6Y^2 - 280X^6Z^2 + 42X^4Y^4 - 840X^4Y^2Z^2 + 1120X^4Z^4 + 28X^2Y^6 - 840X^2Y^4Z^2 + 2240X^2Y^2Z^4 - 896X^2Z^6 + 7Y^8 - 280Y^6Z^2 + 1120Y^4Z^4 - 896Y^2Z^6 + 128Z^8\right)
93
          3\sqrt{5}X\left(7X^8 + 28X^6Y^2 - 280X^6Z^2 + 42X^4Y^4 - 840X^4Y^2Z^2 + 1120X^4Z^4 + 28X^2Y^6 - 840X^2Y^4Z^2 + 2240X^2Y^2Z^4 - 896X^2Z^6 + 7Y^8 - 280Y^6Z^2 + 1120Y^4Z^4 - 896Y^2Z^6 + 128Z^8\right)
94
          3\sqrt{12155}Z\left(X^4-4X^3Y-6X^2Y^2+4XY^3+Y^4\right)\left(X^4+4X^3Y-6X^2Y^2-4XY^3+Y^4\right)
95
             3\sqrt{12155}XYZ(X-Y)(X+Y)\Big(X^2-2XY-Y^2\Big)\Big(X^2+2XY-Y^2\Big)
96
          \frac{3\sqrt{5005}Z\big(X^2-2XY-Y^2\big)\big(X^2+2XY-Y^2\big)\big(X^4+2X^2Y^2-8X^2Z^2+Y^4-8Y^2Z^2+8Z^4\big)}{64}
97
          3\sqrt{5005}XYZ(X-Y)(X+Y)\left(X^4+2X^2Y^2-8X^2Z^2+Y^4-8Y^2Z^2+8Z^4\right)
             3\sqrt{110}Z(X-Y)(X+Y)\left(7X^{6}+21X^{4}Y^{2}-70X^{4}Z^{2}+21X^{2}Y^{4}-140X^{2}Y^{2}Z^{2}+112X^{2}Z^{4}+7Y^{6}-70Y^{4}Z^{2}+112Y^{2}Z^{4}-32Z^{6}\right)
99
          3\sqrt{110}XYZ\left(7X^{6} + 21X^{4}Y^{2} - 70X^{4}Z^{2} + 21X^{2}Y^{4} - 140X^{2}Y^{2}Z^{2} + 112X^{2}Z^{4} + 7Y^{6} - 70Y^{4}Z^{2} + 112Y^{2}Z^{4} - 32Z^{6}\right)
100
```

```
No. expression
                                  -\frac{63X^{10}}{256} - \frac{315X^8Y^2}{256} + \frac{1575X^8Z^2}{128} - \frac{315X^6Y^4}{128} + \frac{1575X^6Y^2Z^2}{128} - \frac{525X^6Z^4}{32} - \frac{525X^6Z^4}{64} - \frac{315X^4Y^6}{64} - \frac{1575X^4Y^2Z^4}{8} + \frac{315X^4Z^6}{4256} + \frac{315X^2Y^8}{32} - \frac{1575X^2Y^4Z^4}{8} + \frac{315X^2Y^2Z^6}{256} - \frac{45X^2Z^8}{256} - \frac{63Y^{10}}{256} + \frac{1575Y^8Z^2}{128} - \frac{525Y^6Z^4}{8} + \frac{315Y^4Z^6}{44} - \frac{45Y^2Z^8}{2} + Z^{10} - \frac{1575X^4Y^4Z^4}{256} - \frac{1575X^4Y^4Z^4}{256}
                                \sqrt{4290}(X-Y)(X+Y)\left(X^2-4XY+Y^2\right)\left(X^2+4XY+Y^2\right)\left(3X^4+6X^2Y^2-96X^2Z^2+3Y^4-96Y^2Z^2+224Z^4\right)
                                 \sqrt{4290}XY(X^2-3Y^2)(3X^2-Y^2)(3X^4+6X^2Y^2-96X^2Z^2+3Y^4-96Y^2Z^2+224Z^4)
103
                                 \sqrt{461890}XZ\left(X^{2}-3Y^{2}\right)\left(X^{6}-33X^{4}Y^{2}+27X^{2}Y^{4}-3Y^{6}\right)
256
 104
                                     \frac{\sqrt{4290}XZ\left(X^2-3Y^2\right)\left(7X^6+21X^4Y^2-84X^4Z^2+21X^2Y^4-168X^2Y^2Z^2+168X^2Z^4+7Y^6-84Y^4Z^2+168Y^2Z^4-64Z^6\right)}{2}X^2+2X^4X^4Z^2+2X^4Z^2+2X^4Z^2+2X^2Z^4+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^4Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X^2Z^2+2X
 105
                                 \frac{\sqrt{461890}YZ\left(3X^2-Y^2\right)\left(3X^6-27X^4Y^2+33X^2Y^4-Y^6\right)}{256}
 106
                                      \frac{\sqrt{4290}YZ\big(3X^2-Y^2\big)\big(7X^6+21X^4Y^2-84X^4Z^2+21X^2Y^4-168X^2Y^2Z^2+168X^2Z^4+7Y^6-84Y^4Z^2+168Y^2Z^4-64Z^6\big)}{128}
 107
                                      \frac{\sqrt{72930}XZ \Big(3X^2 + 3Y^2 - 16Z^2\Big) \Big(X^6 - 21X^4Y^2 + 35X^2Y^4 - 7Y^6\Big)}{256}
108
                                        \sqrt{72930}YZ(3X^2+3Y^2-16Z^2)(7X^6-35X^4Y^2+21X^2Y^4-Y^6)
  109
                                  \sqrt{858}XZ \Big(X^4 - 10X^2Y^2 + 5Y^4\Big) \Big(15X^4 + 30X^2Y^2 - 140X^2Z^2 + 15Y^4 - 140Y^2Z^2 + 168Z^4\Big)
110
                                      \frac{\sqrt{858}YZ \left(5 X^4-10 X^2 Y^2+Y^4\right) \left(15 X^4+30 X^2 Y^2-140 X^2 Z^2+15 Y^4-140 Y^2 Z^2+168 Z^4\right)}{128}
111
                                  \sqrt{55}XZ\Big(63X^{8} + 252X^{6}Y^{2} - 840X^{6}Z^{2} + 378X^{4}Y^{4} - 2520X^{4}Y^{2}Z^{2} + 2016X^{4}Z^{4} + 252X^{2}Y^{6} - 2520X^{2}Y^{4}Z^{2} + 4032X^{2}Y^{2}Z^{4} - 1152X^{2}Z^{6} + 63Y^{8} - 840Y^{6}Z^{2} + 2016Y^{4}Z^{4} - 1152Y^{2}Z^{6} + 128Z^{8}\Big)
112
                                  \sqrt{55}YZ\left(63X^8 + 252X^6Y^2 - 840X^6Z^2 + 378X^4Y^4 - 2520X^4Y^2Z^2 + 2016X^4Z^4 + 252X^2Y^6 - 2520X^2Y^4Z^2 + 4032X^2Y^2Z^4 - 1152X^2Z^6 + 63Y^8 - 840Y^6Z^2 + 2016Y^4Z^4 - 1152Y^2Z^6 + 128Z^8\right)
113
                                      \frac{\sqrt{92378}XY\left(X^{4}-10X^{2}Y^{2}+5Y^{4}\right)\left(5X^{4}-10X^{2}Y^{2}+Y^{4}\right)}{}
114
                                 \sqrt{92378}(X-Y)(X+Y)\left(X^4-4X^3Y-14X^2Y^2-4XY^3+Y^4\right)\left(X^4+4X^3Y-14X^2Y^2+4XY^3+Y^4\right)}{512}
115
                                      \frac{\sqrt{12155}XY(X-Y)(X+Y)\left(X^2+Y^2-18Z^2\right)\left(X^2-2XY-Y^2\right)\left(X^2+2XY-Y^2\right)}{32}
116
                                        \sqrt{12155} \left(X^2 + Y^2 - 18Z^2\right) \left(X^4 - 4X^3Y - 6X^2Y^2 + 4XY^3 + Y^4\right) \left(X^4 + 4X^3Y - 6X^2Y^2 - 4XY^3 + Y^4\right)
117
                                 \frac{\sqrt{2145}XY(X-Y)(X+Y)\left(X^{6}+3X^{4}Y^{2}-42X^{4}Z^{2}+3X^{2}Y^{4}-84X^{2}Y^{2}Z^{2}+168X^{2}Z^{4}+Y^{6}-42Y^{4}Z^{2}+168Y^{2}Z^{4}-112Z^{6}\right)}{32}
118
                                      \sqrt{2145} \left(X^2 - 2XY - Y^2\right) \left(X^2 + 2XY - Y^2\right) \left(X^6 + 3X^4Y^2 - 42X^4Z^2 + 3X^2Y^4 - 84X^2Y^2Z^2 + 168X^2Z^4 + Y^6 - 42Y^4Z^2 + 168Y^2Z^4 - 112Z^6\right)
 119
                                 \sqrt{165}XY \left(7X^8 + 28X^6Y^2 - 336X^6Z^2 + 42X^4Y^4 - 1008X^4Y^2Z^2 + 1680X^4Z^4 + 28X^2Y^6 - 1008X^2Y^4Z^2 + 3360X^2Y^2Z^4 - 1792X^2Z^6 + 7Y^8 - 336Y^6Z^2 + 1680Y^4Z^4 - 1792Y^2Z^6 + 384Z^8\right) + 1000X^4Y^2Z^2 + 1000X^4Z^4 + 10
 120
                                 \sqrt{165}(X-Y)(X+Y)\left(7X^8+28X^6Y^2-336X^6Z^2+42X^4Y^4-1008X^4Y^2Z^2+1680X^4Z^4+28X^2Y^6-1008X^2Y^4Z^2+3360X^2Y^2Z^4-1792X^2Z^6+7Y^8-336Y^6Z^2+1680Y^4Z^4-1792Y^2Z^6+384Z^8\right)
121
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No.
                    expression
                        \sqrt{14586}XYZ(X^2-3Y^2)(3X^2-Y^2)(15X^4+30X^2Y^2-160X^2Z^2+15Y^4-160Y^2Z^2+224Z^4)
 122
                              Z\left(693X^{10} + 3465X^8Y^2 - 11550X^8Z^2 + 6930X^6Y^4 - 46200X^6Y^2Z^2 + 36960X^6Z^4 + 6930X^4Y^6 - 6930X^4Y^6Z^2 + 110880X^4Y^2Z^4 - 31680X^4Z^6 + 3465X^2Y^8 - 46200X^2Y^6Z^2 + 110880X^2Y^4Z^4 - 63360X^2Y^2Z^6 + 7040X^2Z^8 + 6930X^4Y^4Z^2 + 10880X^4Y^2Z^4 - 31680Y^4Z^6 + 7040Y^2Z^8 - 256Z^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{10}X^{1
 123
                        \sqrt{14586}Z(X-Y)(X+Y)\left(X^2-4XY+Y^2\right)\left(X^2+4XY+Y^2\right)\left(15X^4+30X^2Y^2-160X^2Z^2+15Y^4-160Y^2Z^2+224Z^4\right)
 124
                              \sqrt{46189}Y \left(3 X^2-Y^2\right) \left(X^2+Y^2-20 Z^2\right) \left(3 X^6-27 X^4 Y^2+33 X^2 Y^4-Y^6\right)
 125
                        \sqrt{30030}Y(3X^2 - Y^2)(X^8 + 4X^6Y^2 - 56X^6Z^2 + 6X^4Y^4 - 168X^4Y^2Z^2 + 336X^4Z^4 + 4X^2Y^6 - 168X^2Y^4Z^2 + 672X^2Y^2Z^4 - 448X^2Z^6 + Y^8 - 56Y^6Z^2 + 336Y^4Z^4 - 448Y^2Z^6 + 128Z^8) + 24X^2Y^4Z^2 + 24X^2Y^2Z^4 - 24X^2Y^2Z^2 - 24X^2Y^2Z^4 - 24X^2Y^2Z^2 - 24X^2Y^2 - 
 126
                              \sqrt{46189}X(X^2-3Y^2)(X^2+Y^2-20Z^2)(X^6-33X^4Y^2+27X^2Y^4-3Y^6)
 127
                         \sqrt{30030}X\big(X^2 - 3Y^2\big)\big(X^8 + 4X^6Y^2 - 56X^6Z^2 + 6X^4Y^4 - 168X^4Y^2Z^2 + 336X^4Z^4 + 4X^2Y^6 - 168X^2Y^4Z^2 + 672X^2Y^2Z^4 - 448X^2Z^6 + Y^8 - 56Y^6Z^2 + 336Y^4Z^4 - 448Y^2Z^6 + 128Z^8\big)
 128
                         \sqrt{88179}Y\left(11X^{10}-165X^{8}Y^{2}+462X^{6}Y^{4}-330X^{4}Y^{6}+55X^{2}Y^{8}-Y^{10}\right)
 129
                         \sqrt{88179}X(X^{10}-55X^8Y^2+330X^6Y^4-462X^4Y^6+165X^2Y^8-11Y^{10})
 130
                                                                                                              512
                              \sqrt{36465}Y(7X^6-35X^4Y^2+21X^2Y^4-Y^6)(X^4+2X^2Y^2-36X^2Z^2+Y^4-36Y^2Z^2+96Z^4)
 131
                         \sqrt{36465}X(X^6-21X^4Y^2+35X^2Y^4-7Y^6)(X^4+2X^2Y^2-36X^2Z^2+Y^4-36Y^2Z^2+96Z^4)
 132
                                                                                                                                          512
                             3\sqrt{143}Y\left(5X^4 - 10X^2Y^2 + Y^4\right)\left(5X^6 + 15X^4Y^2 - 240X^4Z^2 + 15X^2Y^4 - 480X^2Y^2Z^2 + 1120X^2Z^4 + 5Y^6 - 240Y^4Z^2 + 1120Y^2Z^4 - 896Z^6\right)
 133
                             3\sqrt{143}X\left(X^4 - 10X^2Y^2 + 5Y^4\right)\left(5X^6 + 15X^4Y^2 - 240X^4Z^2 + 15X^2Y^4 - 480X^2Y^2Z^2 + 1120X^2Z^4 + 5Y^6 - 240Y^4Z^2 + 1120Y^2Z^4 - 896Z^6\right)
 134
                         \sqrt{66}Y \left(21X^{10} + 105X^8Y^2 - 1260X^8Z^2 + 210X^6Y^4 - 5040X^6Y^2Z^2 + 8400X^6Z^4 + 210X^4Y^6 - 7560X^4Y^4Z^2 + 25200X^4Y^2Z^4 - 13440X^4Z^6 + 105X^2Y^8 - 5040X^2Y^6Z^2 + 25200X^2Y^4Z^4 - 26880X^2Y^2Z^6 + 5760X^2Z^8 + 21Y^{10} - 1260Y^8Z^2 + 8400Y^6Z^4 - 13440Y^4Z^6 + 5760Y^2Z^8 - 512Z^{10}\right)
 135
                              \sqrt{66}X(21X^{10} + 105X^8Y^2 - 1260X^8Z^2 + 210X^6Y^4 - 5040X^6Y^2Z^2 + 8400X^6Z^4 + 210X^4Y^6 - 7560X^4Y^4Z^2 + 25200X^4Y^2Z^4 - 13440X^4Z^6 + 105X^2Y^8 - 5040X^2Y^6Z^2 + 25200X^2Y^4Z^4 - 26880X^2Y^2Z^6 + 5760X^2Z^8 + 21Y^{10} - 1260Y^8Z^2 + 8400Y^6Z^4 - 13440Y^4Z^6 + 5760Y^2Z^8 - 512Z^{10}X^2Y^8 - 1240Y^4Z^4 - 12
 136
                         \sqrt{1939938}Z(X-Y)(X+Y)(X^4-4X^3Y-14X^2Y^2-4XY^3+Y^4)(X^4+4X^3Y-14X^2Y^2+4XY^3+Y^4)
 137
                         \sqrt{1939938}XYZ(X^4-10X^2Y^2+5Y^4)(5X^4-10X^2Y^2+Y^4)
 138
                              \sqrt{692835}Z\big(X^2+Y^2-6Z^2\big)\big(X^4-4X^3Y-6X^2Y^2+4XY^3+Y^4\big)\big(X^4+4X^3Y-6X^2Y^2-4XY^3+Y^4\big)
 139
                         \sqrt{692835}XYZ(X-Y)(X+Y)(X^2+Y^2-6Z^2)(X^2-2XY-Y^2)(X^2+2XY-Y^2)
 140
                              3\sqrt{1001}Z\big(X^2 - 2XY - Y^2\big)\big(X^2 + 2XY - Y^2\big)\big(5X^6 + 15X^4Y^2 - 70X^4Z^2 + 15X^2Y^4 - 140X^2Y^2Z^2 + 168X^2Z^4 + 5Y^6 - 70Y^4Z^2 + 168Y^2Z^4 - 80Z^6\big)
 141
                              3\sqrt{1001}XYZ(X-Y)(X+Y)\left(5X^{6}+15X^{4}Y^{2}-70X^{4}Z^{2}+15X^{2}Y^{4}-140X^{2}Y^{2}Z^{2}+168X^{2}Z^{4}+5Y^{6}-70Y^{4}Z^{2}+168Y^{2}Z^{4}-80Z^{6}\right)
 142
                         \sqrt{2145}Z(X-Y)(X+Y)\left(21X^8+84X^6Y^2-336X^6Z^2+126X^4Y^4-1008X^4Y^2Z^2+1008X^4Z^4+84X^2Y^6-1008X^2Y^4Z^2+2016X^2Y^2Z^4-768X^2Z^6+21Y^8-336Y^6Z^2+1008Y^4Z^4-768Y^2Z^6+128Z^8\right)
 143
                              \sqrt{2145}XYZ\left(21X^8+84X^6Y^2-336X^6Z^2+126X^4Y^4-1008X^4Y^2Z^2+1008X^4Z^4+84X^2Y^6-1008X^2Y^4Z^2+2016X^2Y^2Z^4-768X^2Z^6+21Y^8-336Y^6Z^2+1008Y^4Z^4-768Y^2Z^6+128Z^8\right)
144
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