No. 14 $D_{2d}-1$ -4m2 (-4m2 setting) [tetragonal] (axial)

表 1 rank 0

No.	expression
1	1

表 2 rank 1

No.	expression
2	Z
3	X
4	Y

表 3 rank 2

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

表 4 rank 3

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

表 5 rank 4

No.	expression
17	$-\frac{\sqrt{5}XY(X^2+Y^2-6Z^2)}{2}$
18	$\frac{\sqrt{5}(X-Y)(X+Y)(X^2+Y^2-6Z^2)}{4}$
19	$\frac{\sqrt{21}\left(X^4 - 3X^2Y^2 - 3X^2Z^2 + Y^4 - 3Y^2Z^2 + Z^4\right)}{6}$
20	$-\frac{\sqrt{15}\left(X^4-12X^2Y^2+6X^2Z^2+Y^4+6Y^2Z^2-2Z^4\right)}{12}$
21	$\frac{\sqrt{35}XY(X-Y)(X+Y)}{2}$
22	$-\frac{\sqrt{35}XZ(X-Z)(X+Z)}{2}$
23	$\frac{\sqrt{35}YZ(Y-Z)(Y+Z)}{2}$
24	$-\frac{\sqrt{5}XZ(X^2-6Y^2+Z^2)}{2}$
25	$-rac{\sqrt{5}YZig(6X^2\!-\!Y^2\!-\!Z^2ig)}{2}$

表 6 rank 5

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

表7 rank 6

```
No. expression
         \sqrt{462}XY(X^2-3Y^2)(3X^2-Y^2)
37
         \sqrt{210}XY(X^4+2X^2Y^2-16X^2Z^2+Y^4-16Y^2Z^2+16Z^4)
 38
          \sqrt{2310}(X\!-\!Y)(X\!+\!Y)(X\!-\!Z)(X\!+\!Z)(Y\!-\!Z)(Y\!+\!Z)
39
         \sqrt{42}(X-Y)(X+Y)(X^4-9X^2Y^2-5X^2Z^2+Y^4-5Y^2Z^2+5Z^4)
 40
         \frac{8}{\sqrt{2} \cdot \left(2X^6 - 15X^4Y^2 - 15X^4Z^2 - 15X^2Y^4 + 180X^2Y^2Z^2 - 15X^2Z^4 + 2Y^6 - 15Y^4Z^2 - 15Y^2Z^4 + 2Z^6\right)}
 41
           \sqrt{14} \left( X^6 - 15X^4Z^2 + 15X^2Z^4 + Y^6 - 15Y^4Z^2 + 15Y^2Z^4 - 2Z^6 \right)
 42
          -\frac{3\sqrt{7}XY(X-Y)(X+Y)(X+Y)(X^2+Y^2-10Z^2)}{}
 43
         3\sqrt{7}XZ(X-Z)(X+Z)(X^2-10Y^2+Z^2)
 44
         3\sqrt{7}YZ(Y-Z)(Y+Z)(10X^2-Y^2-Z^2)
 45
         \sqrt{462}XZ(X^2-3Z^2)(3X^2-Z^2)
 46
          -\frac{16}{\sqrt{462}YZ(Y^2 - 3Z^2)(3Y^2 - Z^2)}
 47
          \sqrt{210}XZ \Big(X^4 - 16X^2Y^2 + 2X^2Z^2 + 16Y^4 - 16Y^2Z^2 + Z^4\Big)
 48
            \frac{16}{\sqrt{210}YZ\left(16X^4 - 16X^2Y^2 - 16X^2Z^2 + Y^4 + 2Y^2Z^2 + Z^4\right)}
 49
```

表 8 rank 7

No.	expression
50	$-\frac{\sqrt{231}XYZ(X-Y)(X+Y)\left(3X^2+3Y^2-10Z^2\right)}{4}$
51	$-\frac{Z \left(35 X^{6}+105 X^{4} Y^{2}-210 X^{4} Z^{2}+105 X^{2} Y^{4}-420 X^{2} Y^{2} Z^{2}+168 X^{2} Z^{4}+35 Y^{6}-210 Y^{4} Z^{2}+168 Y^{2} Z^{4}-16 Z^{6}\right)}{16 X^{6}+105 X^{4} Y^{2}-210 X^{4} Z^{2}+105 X^{2} Y^{4}-420 X^{2} Y^{2} Z^{2}+168 X^{2} Z^{4}+35 Y^{6}-210 Y^{4} Z^{2}+168 Y^{2} Z^{4}-16 Z^{6}\right)}$
52	$-\frac{\sqrt{231}Z(X^2-2XY-Y^2)(X^2+2XY-Y^2)(3X^2+3Y^2-10Z^2)}{2}$
	$\frac{16}{\sqrt{6006}Z(X-Y)(X+Y)(X^2-4XY+Y^2)(X^2+4XY+Y^2)}$
53	$\frac{32}{\sqrt{42}Z(X-Y)(X+Y)\left(15X^4+30X^2Y^2-80X^2Z^2+15Y^4-80Y^2Z^2+48Z^4\right)}$
54	32
55	$\frac{\sqrt{91}XYZ(3X^4 - 5X^2Y^2 - 5X^2Z^2 + 3Y^4 - 5Y^2Z^2 + 3Z^4)}{2}$
56	$-\frac{\sqrt{77}XYZ\left(3X^4-20X^2Y^2+10X^2Z^2+3Y^4+10Y^2Z^2-6Z^4\right)}{4}$
57	$\underline{X\big(16X^6 - 168X^4Y^2 - 168X^4Z^2 + 210X^2Y^4 + 420X^2Y^2Z^2 + 210X^2Z^4 - 35Y^6 - 105Y^4Z^2 - 105Y^2Z^4 - 35Z^6\big)}$
58	$-\frac{Y \left(35 X^{6}-210 X^{4} Y^{2}+105 X^{4} Z^{2}+168 X^{2} Y^{4}-420 X^{2} Y^{2} Z^{2}+105 X^{2} Z^{4}-16 Y^{6}+168 Y^{4} Z^{2}-210 Y^{2} Z^{4}+35 Z^{6}\right)}{2} + \frac{10}{2} \left(35 X^{6}-210 X^{4} Y^{2}+105 X^{4} Z^{2}+168 X^{2} Y^{4}-420 X^{2} Y^{2} Z^{2}+105 X^{2} Z^{4}-16 Y^{6}+168 Y^{4} Z^{2}-210 Y^{2} Z^{4}+35 Z^{6}\right)}{2} + \frac{10}{2} \left(35 X^{6}-210 X^{4} Y^{2}+105 X^{4} Z^{2}+168 X^{2} Y^{4}-420 X^{2} Y^{2} Z^{2}+105 X^{2} Z^{4}-16 Y^{6}+168 Y^{4} Z^{2}-210 Y^{2} Z^{4}+35 Z^{6}\right)}{2} + \frac{10}{2} \left(35 X^{6}-210 X^{4} Y^{2}+105 X^{2} Z^{4}+105 X^{2} Z^{4}+105 X^{2} Z^{4}+105 X^{2} Z^{4}+105 Z^{4} Z^{4}+105 Z^{4}+10$
59	$\frac{\sqrt{231}X(10X^2 - 3Y^2 - 3Z^2)(Y^2 - 2YZ - Z^2)(Y^2 + 2YZ - Z^2)}{(Y^2 - 2YZ - Z^2)(Y^2 - 2YZ - Z^2)}$
	$-\frac{\sqrt{231}Y \left(X^2 - 2XZ - Z^2\right) \left(X^2 + 2XZ - Z^2\right) \left(3X^2 - 10Y^2 + 3Z^2\right)}{16}$
60	10
61	$\frac{\sqrt{6006}X(Y-Z)(Y+Z)(Y^2-4YZ+Z^2)(Y^2+4YZ+Z^2)}{32}$
62	$\frac{\sqrt{6006}Y(X-Z)(X+Z)(X^2-4XZ+Z^2)(X^2+4XZ+Z^2)}{32}$
63	$\sqrt{42}X(Y-Z)(Y+Z)\left(48X^4-80X^2Y^2-80X^2Z^2+15Y^4+30Y^2Z^2+15Z^4\right)$
64	$\sqrt{42}Y(X-Z)(X+Z)\left(15X^4 - 80X^2Y^2 + 30X^2Z^2 + 48Y^4 - 80Y^2Z^2 + 15Z^4\right)$ 32

表 9 rank 8

No.	expression
65	$-\frac{\sqrt{858}XY(X^2-3Y^2)(3X^2-Y^2)(X^2+Y^2-14Z^2)}{2}$
66	$\frac{32}{3\sqrt{70}XY\left(X^{6}+3X^{4}Y^{2}-30X^{4}Z^{2}+3X^{2}Y^{4}-60X^{2}Y^{2}Z^{2}+80X^{2}Z^{4}+Y^{6}-30Y^{4}Z^{2}+80Y^{2}Z^{4}-32Z^{6}\right)}{3\sqrt{70}XY\left(X^{6}+3X^{4}Y^{2}-30X^{4}Z^{2}+3X^{2}Y^{4}-60X^{2}Y^{2}Z^{2}+80X^{2}Z^{4}+Y^{6}-30Y^{4}Z^{2}+80Y^{2}Z^{4}-32Z^{6}\right)}$
	$-\frac{32}{\sqrt{858}(X-Y)(X+Y)\left(X^2+Y^2-14Z^2\right)\left(X^2-4XY+Y^2\right)\left(X^2+4XY+Y^2\right)}$
67	64
68	$-\frac{3\sqrt{70}(X-Y)(X+Y)\left(X^{6}+3X^{4}Y^{2}-30X^{4}Z^{2}+3X^{2}Y^{4}-60X^{2}Y^{2}Z^{2}+80X^{2}Z^{4}+Y^{6}-30Y^{4}Z^{2}+80Y^{2}Z^{4}-32Z^{6}\right)}{64}$
69	$\frac{\sqrt{33} \left(X^8 - 14X^6Y^2 - 14X^6Z^2 + 35X^4Y^4 + 35X^4Z^4 - 14X^2Y^6 - 14X^2Z^6 + Y^8 - 14Y^6Z^2 + 35Y^4Z^4 - 14Y^2Z^6 + Z^8\right)}{9}$
70	$\frac{\sqrt{286} \left(X^8 - 14X^6Y^2 - 14X^6Z^2 + 210X^4Y^2Z^2 - 14X^2Y^6 + 210X^2Y^4Z^2 - 420X^2Y^2Z^4 + 28X^2Z^6 + Y^8 - 14Y^6Z^2 + 28Y^2Z^6 - 2Z^8\right)}{(286)^{1/2}}$
71	$\frac{64}{\sqrt{210}\left(X^8 - 62X^6Y^2 + 34X^6Z^2 + 160X^4Y^4 - 30X^4Y^2Z^2 - 80X^4Z^4 - 62X^2Y^6 - 30X^2Y^4Z^2 + 60X^2Y^2Z^4 + 28X^2Z^6 + Y^8 + 34Y^6Z^2 - 80Y^4Z^4 + 28Y^2Z^6 - 2Z^8\right)}$
72	$\frac{64}{3\sqrt{715}XY(X-Y)(X+Y)(X^2-2XY-Y^2)(X^2+2XY-Y^2)}$
72	16
73	$\frac{3\sqrt{77}XY(X-Y)(X+Y)\left(X^4+2X^2Y^2-24X^2Z^2+Y^4-24Y^2Z^2+40Z^4\right)}{16}$
74	$-\frac{3\sqrt{715}XZ(X-Z)(X+Z)\left(X^2-2XZ-Z^2\right)\left(X^2+2XZ-Z^2\right)}{16}$
75	$\frac{3\sqrt{715}YZ(Y-Z)(Y+Z)(Y^2-2YZ-Z^2)(Y^2+2YZ-Z^2)}{16}$
76	$-\frac{3\sqrt{77}XZ(X-Z)(X+Z)\left(X^4-24X^2Y^2+2X^2Z^2+40Y^4-24Y^2Z^2+Z^4\right)}{2}$
77	16
78	$-\frac{\sqrt{858}XZ\left(X^2-3Z^2 ight)\left(3X^2-Z^2 ight)\left(X^2-14Y^2+Z^2 ight)}{32}$
79	$-\frac{\sqrt{858}YZ\left(Y^2-3Z^2\right)\left(3Y^2-Z^2\right)\left(14X^2-Y^2-Z^2\right)}{32}$
80	$-\frac{3\sqrt{70}XZ\left(X^{6}-30X^{4}Y^{2}+3X^{4}Z^{2}+80X^{2}Y^{4}-60X^{2}Y^{2}Z^{2}+3X^{2}Z^{4}-32Y^{6}+80Y^{4}Z^{2}-30Y^{2}Z^{4}+Z^{6}\right)}{32}$
	$\frac{32}{3\sqrt{70}YZ}\left(32X^{6} - 80X^{4}Y^{2} - 80X^{4}Z^{2} + 30X^{2}Y^{4} + 60X^{2}Y^{2}Z^{2} + 30X^{2}Z^{4} - Y^{6} - 3Y^{4}Z^{2} - 3Y^{2}Z^{4} - Z^{6}\right)$
81	32

表 10 rank 9

```
expression
No.
                  \sqrt{510510}XYZ(X-Y)(X+Y)(X-Z)(X+Z)(Y-Z)(Y+Z)
                  \sqrt{4290}XYZ(X-Y)(X+Y)(3X^4-11X^2Y^2-7X^2Z^2+3Y^4-7Y^2Z^2+7Z^4)
                 Z\left(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\right)
                 3\sqrt{12155}Z\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)
 85
                 \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}
                       \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)
 87
                      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)
                  \sqrt{330}XYZ \left(6X^{6} - 21X^{4}Y^{2} - 21X^{4}Z^{2} - 21X^{2}Y^{4} + 140X^{2}Y^{2}Z^{2} - 21X^{2}Z^{4} + 6Y^{6} - 21Y^{4}Z^{2} - 21Y^{2}Z^{4} + 6Z^{6}\right)
                 3\sqrt{1430}XYZ\big(X^{6}-7X^{4}Z^{2}+7X^{2}Z^{4}+Y^{6}-7Y^{4}Z^{2}+7Y^{2}Z^{4}-2Z^{6}\big)
 90
                 X \left(128X^{8} - 2304X^{6}Y^{2} - 2304X^{6}Z^{2} + 6048X^{4}Y^{4} + 12096X^{4}Y^{2}Z^{2} + 6048X^{4}Z^{4} - 3360X^{2}Y^{6} - 10080X^{2}Y^{4}Z^{2} - 10080X^{2}Y^{2}Z^{4} - 3360X^{2}Z^{6} + 315Y^{8} + 1260Y^{6}Z^{2} + 1890Y^{4}Z^{4} + 1260Y^{2}Z^{6} + 315Z^{8}\right)
91
                  Y \left(315X^8 - 3360X^6Y^2 + 1260X^6Z^2 + 6048X^4Y^4 - 10080X^4Y^2Z^2 + 1890X^4Z^4 - 2304X^2Y^6 + 12096X^2Y^4Z^2 - 10080X^2Y^2Z^4 + 1260X^2Z^6 + 128Y^8 - 2304Y^6Z^2 + 6048Y^4Z^4 - 3360Y^2Z^6 + 315Z^8\right) + 230X^4Y^4Z^2 + 120X^4Y^4Z^2 + 120X^4Y^4 + 120X^4Y^4 + 120X^4Y^4 + 120X^4Y^4 + 120X^4Y^4 + 120X^4Y^4 + 1
92
                 3\sqrt{12155}X\left(Y^{4}-4Y^{3}Z-6Y^{2}Z^{2}+4YZ^{3}+Z^{4}\right)\left(Y^{4}+4Y^{3}Z-6Y^{2}Z^{2}-4YZ^{3}+Z^{4}\right)
 93
                 3\sqrt{12155}Y\left(X^4-4X^3Z-6X^2Z^2+4XZ^3+Z^4\right)\left(X^4+4X^3Z-6X^2Z^2-4XZ^3+Z^4\right)
 94
                 3\sqrt{5005}X \left(Y^2 - 2YZ - Z^2\right) \left(Y^2 + 2YZ - Z^2\right) \left(8X^4 - 8X^2Y^2 - 8X^2Z^2 + Y^4 + 2Y^2Z^2 + Z^4\right)
 95
                 3\sqrt{5005}Y \Big(X^2 - 2XZ - Z^2\Big) \Big(X^2 + 2XZ - Z^2\Big) \Big(X^4 - 8X^2Y^2 + 2X^2Z^2 + 8Y^4 - 8Y^2Z^2 + Z^4\Big)
 96
                  \sqrt{4290}X(Y-Z)(Y+Z)\left(14X^2-3Y^2-3Z^2\right)\left(Y^2-4YZ+Z^2\right)\left(Y^2+4YZ+Z^2\right)
 97
                       \sqrt{4290}Y(X-Z)(X+Z)\left(X^2-4XZ+Z^2\right)\left(X^2+4XZ+Z^2\right)\left(3X^2-14Y^2+3Z^2\right)
 98
                  3\sqrt{110}X(Y-Z)(Y+Z)\left(32X^6-112X^4Y^2-112X^4Z^2+70X^2Y^4+140X^2Y^2Z^2+70X^2Z^4-7Y^6-21Y^4Z^2-21Y^2Z^4-7Z^6\right)
 99
                      3\sqrt{110}Y(X-Z)(X+Z)\left(7X^{6}-70X^{4}Y^{2}+21X^{4}Z^{2}+112X^{2}Y^{4}-140X^{2}Y^{2}Z^{2}+21X^{2}Z^{4}-32Y^{6}+112Y^{4}Z^{2}-70Y^{2}Z^{4}+7Z^{6}\right)
100
```

```
No.
                     expression
                           \sqrt{92378}XY(X^4-10X^2Y^2+5Y^4)(5X^4-10X^2Y^2+Y^4)
101
                           \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)
  102
                           \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)
  103
                           104
                           \sqrt{140063}(X-Y)(X+Y)\left(22X^8-653X^6Y^2-315X^6Z^2+2602X^4Y^4-945X^4Y^2Z^2+1575X^4Z^4-653X^2Y^6-945X^2Y^4Z^2+3150X^2Y^2Z^4-1680X^2Z^6+22Y^8-315Y^6Z^2+1575Y^4Z^4-1680Y^2Z^6+360Z^8\right)
  105
                                                                                                                                                                                                                                                                                                                   11984
                           \sqrt{1071070}(X-Y)(X+Y)\left(9X^8-165X^6Y^2-231X^6Z^2-25X^4Y^4+3801X^4Y^2Z^2+406X^4Z^4-165X^2Y^6+3801X^2Y^4Z^2-9674X^2Y^2Z^4+266X^2Z^6+9Y^8-231Y^6Z^2+406Y^4Z^4+266Y^2Z^6-57Z^8\right)
  106
                           \sqrt{390} \cdot \left(2X^{10} - 45X^8Y^2 - 45X^8Z^2 + 42X^6Y^4 + 1008X^6Y^2Z^2 + 42X^6Z^4 + 42X^4Y^6 - 1260X^4Y^2Z^4 + 42X^4Z^6 - 45X^2Y^8 + 1008X^2Y^6Z^2 - 1260X^2Y^4Z^4 + 1008X^2Y^2Z^6 - 45X^2Z^8 + 2Y^{10} - 45Y^8Z^2 + 42Y^6Z^4 + 42Y^4Z^6 - 45Y^2Z^8 + 2Z^{10}\right)
  107
                                 \sqrt{420189} \cdot \left(22X^{10} + 45X^8Y^2 - 1035X^8Z^2 - 105X^6Y^4 - 630X^6Y^2Z^2 + 4935X^6Z^4 - 105X^4Y^6 + 3150X^4Y^4Z^2 - 1575X^4Y^2Z^4 - 4830X^4Z^6 + 45X^2Y^8 - 630X^2Y^6Z^2 - 1575X^2Y^4Z^4 + 1260X^2Y^2Z^6 + 990X^2Z^8 + 22Y^{10} - 1035Y^8Z^2 + 4935Y^6Z^4 - 4830Y^4Z^6 + 990Y^2Z^8 - 44Z^{10}\right)
  108
                                                                                                                                                                                                                                                                                                                                                                                                                            35952
                                 \sqrt{3213210} \cdot \left(3X^{10} - 96X^8Y^2 - 39X^8Z^2 + 224X^6Y^4 + 1344X^6Y^2Z^2 - 42X^6Z^4 + 224X^4Y^6 - 6720X^4Y^4Z^2 + 3360X^4Y^2Z^4 - 182X^4Z^6 - 96X^2Y^8 + 1344X^2Y^6Z^2 + 3360X^2Y^4Z^4 - 2688X^2Y^2Z^6 + 135X^2Z^8 + 3Y^{10} - 39Y^8Z^2 - 42Y^6Z^4 - 182Y^4Z^6 + 135Y^2Z^8 - 6Z^{10}\right) + 24X^2Y^6Z^4 - 182X^4Z^6 - 182X^4Z^6
  109
                                 \sqrt{12155}XY(X-Y)(X+Y)(X^2+Y^2-18Z^2)(X^2-2XY-Y^2)(X^2+2XY-Y^2)
  110
                                 \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)
111
                           \sqrt{12155}XZ(X-Z)(X+Z)\left(X^2-18Y^2+Z^2\right)\left(X^2-2XZ-Z^2\right)\left(X^2+2XZ-Z^2\right)
112
                           \sqrt{12155}YZ(Y-Z)(Y+Z)\left(18X^2-Y^2-Z^2\right)\left(Y^2-2YZ-Z^2\right)\left(Y^2+2YZ-Z^2\right)
113
                           \sqrt{2145}XZ(X-Z)(X+Z)\left(X^{6}-42X^{4}Y^{2}+3X^{4}Z^{2}+168X^{2}Y^{4}-84X^{2}Y^{2}Z^{2}+3X^{2}Z^{4}-112Y^{6}+168Y^{4}Z^{2}-42Y^{2}Z^{4}+Z^{6}\right)
  114
                           \sqrt{2145}YZ(Y-Z)(Y+Z)\left(112X^{6}-168X^{4}Y^{2}-168X^{4}Z^{2}+42X^{2}Y^{4}+84X^{2}Y^{2}Z^{2}+42X^{2}Z^{4}-Y^{6}-3Y^{4}Z^{2}-3Y^{2}Z^{4}-Z^{6}\right)
115
                           \sqrt{92378}XZ(X^4-10X^2Z^2+5Z^4)(5X^4-10X^2Z^2+Z^4)
  116
                                 \sqrt{92378}YZ \left(Y^4 - 10Y^2Z^2 + 5Z^4\right) \left(5Y^4 - 10Y^2Z^2 + Z^4\right)
117
                           \sqrt{4290}XZ\big(X^2-3Z^2\big)\big(3X^2-Z^2\big)\big(3X^4-96X^2Y^2+6X^2Z^2+224Y^4-96Y^2Z^2+3Z^4\big)
118
                                 \frac{\sqrt{4290}YZ\left(Y^2-3Z^2\right)\left(3Y^2-Z^2\right)\left(224X^4-96X^2Y^2-96X^2Z^2+3Y^4+6Y^2Z^2+3Z^4\right)}{2}
  119
                           \sqrt{165}XZ\left(7X^8 - 336X^6Y^2 + 28X^6Z^2 + 1680X^4Y^4 - 1008X^4Y^2Z^2 + 42X^4Z^4 - 1792X^2Y^6 + 3360X^2Y^4Z^2 - 1008X^2Y^2Z^4 + 28X^2Z^6 + 384Y^8 - 1792Y^6Z^2 + 1680Y^4Z^4 - 336Y^2Z^6 + 728Y^8 - 128X^2Y^2Z^4 + 128X^2Z^2 + 128X^2 + 128X
  120
                                                                                                                                                                                                                                                                                           128
                                 \sqrt{165}YZ\left(384X^8 - 1792X^6Y^2 - 1792X^6Z^2 + 1680X^4Y^4 + 3360X^4Y^2Z^2 + 1680X^4Z^4 - 336X^2Y^6 - 1008X^2Y^4Z^2 - 1008X^2Y^2Z^4 - 336X^2Z^6 + 7Y^8 + 28Y^6Z^2 + 42Y^4Z^4 + 28Y^2Z^6 + 7Z^8 + 22Y^4Z^4 - 2102X^2Y^4Z^4 - 1008X^2Y^4Z^4 - 1008X^2Y^4 - 1008X^2Y
121
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No.
                           expression
                                        \sqrt{692835}XYZ(X-Y)(X+Y)(X^2+Y^2-6Z^2)(X^2-2XY-Y^2)(X^2+2XY-Y^2)
 122
                                      3\sqrt{1001}XYZ(X-Y)(X+Y)\left(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\right)
 123
                                       Z\Big(693X^{10} + 3465X^8Y^2 - 11550X^8Z^2 + 6930X^6Y^4 - 46200X^6Y^2Z^2 + 36960X^6Z^4 + 6930X^4Y^6 - 69300X^4Y^4Z^2 + 110880X^4Y^2Z^4 - 31680X^4Z^6 + 3465X^2Y^8 - 46200X^2Y^6Z^2 + 110880X^2Y^2Z^6 + 7040X^2Z^8 + 693Y^{10} - 11550Y^8Z^2 + 36960Y^6Z^4 - 31680Y^4Z^6 + 7040Y^2Z^8 - 256Z^{10} + 7040Y^2Z^8 - 262Y^2Z^4 - 110880X^4Y^2Z^4 - 110880X^4Z^4 - 110880X^4 - 
 124
                                        \sqrt{692835}Z(X^2+Y^2-6Z^2)(X^4-4X^3Y-6X^2Y^2+4XY^3+Y^4)(X^4+4X^3Y-6X^2Y^2-4XY^3+Y^4)
 125
                                      \underline{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)}
 126
                                 \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)
 127
                                 \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)
 128
                                \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)
 129
                                 \sqrt{2431}XYZ\left(5X^8 - 30X^6Y^2 - 30X^6Z^2 + 63X^4Y^4 + 63X^4Z^4 - 30X^2Y^6 - 30X^2Z^6 + 5Y^8 - 30Y^6Z^2 + 63Y^4Z^4 - 30Y^2Z^6 + 5Z^8\right)
 130
                                        \sqrt{230945}XYZ\left(X^8-6X^6Y^2-6X^6Z^2+42X^4Y^2Z^2-6X^2Y^6+42X^2Y^4Z^2-84X^2Y^2Z^4+12X^2Z^6+Y^8-6Y^6Z^2+12Y^2Z^6-2Z^8\right)
 131
                                        \sqrt{3003}XYZ\left(5X^8 - 150X^6Y^2 + 90X^6Z^2 + 336X^4Y^4 - 70X^4Y^2Z^2 - 168X^4Z^4 - 150X^2Y^6 - 70X^2Y^4Z^2 + 140X^2Y^2Z^4 + 60X^2Z^6 + 5Y^8 + 90Y^6Z^2 - 168Y^4Z^4 + 60Y^2Z^6 - 10Z^8\right)
 132
                                X \left(256X^{10} - 7040X^8Y^2 - 7040X^8Y^2 - 7040X^8Y^2 - 7040X^8Y^2 + 31680X^6Y^4 + 63360X^6Y^2Z^2 + 31680X^6Y^4 - 6390Y^4Z^4 - 6930Y^4Z^4 - 6930Y^4
 133
                                      Y \left(693X^{10} - 11550X^8Y^2 + 3465X^8Z^2 + 36960X^6Y^4 - 46200X^6Y^2Z^2 + 6930X^4Y^2Z^4 + 6930X^4Y^2Z^4 + 6930X^4Y^2Z^4 + 6930X^4Y^2Z^4 + 6930X^2Y^6Z^2 + 110880X^2Y^4Z^4 - 46200X^2Y^2Z^6 + 3465X^2Z^8 - 256Y^{10} + 7040Y^8Z^2 - 31680Y^4Z^6 + 11550Y^2Z^8 + 693Z^{10} + 110880X^2Y^4Z^4 + 110880X^2Y^4 + 1108
 134
                                 \sqrt{692835}X(6X^2-Y^2-Z^2)(Y^4-4Y^3Z-6Y^2Z^2+4YZ^3+Z^4)(Y^4+4Y^3Z-6Y^2Z^2-4YZ^3+Z^4)
 135
                                        \sqrt{692835}Y(X^2-6Y^2+Z^2)(X^4-4X^3Z-6X^2Z^2+4XZ^3+Z^4)(X^4+4X^3Z-6X^2Z^2-4XZ^3+Z^4)
 136
                                3\sqrt{1001}X\left(Y^2 - 2YZ - Z^2\right)\left(Y^2 + 2YZ - Z^2\right)\left(80X^6 - 168X^4Y^2 - 168X^4Z^2 + 70X^2Y^4 + 140X^2Y^2Z^2 + 70X^2Z^4 - 5Y^6 - 15Y^4Z^2 - 15Y^2Z^4 - 5Z^6\right)
                                     3\sqrt{1001}Y\left(X^2 - 2XZ - Z^2\right)\left(X^2 + 2XZ - Z^2\right)\left(5X^6 - 70X^4Y^2 + 15X^4Z^2 + 168X^2Y^4 - 140X^2Y^2Z^2 + 15X^2Z^4 - 80Y^6 + 168Y^4Z^2 - 70Y^2Z^4 + 5Z^6\right)
 138
                                 \sqrt{1939938}X(Y-Z)(Y+Z)\left(Y^{4}-4Y^{3}Z-14Y^{2}Z^{2}-4YZ^{3}+Z^{4}\right)\left(Y^{4}+4Y^{3}Z-14Y^{2}Z^{2}+4YZ^{3}+Z^{4}\right)
 139
                                 \sqrt{1939938}Y(X-Z)(X+Z)\left(X^{4}-4X^{3}Z-14X^{2}Z^{2}-4XZ^{3}+Z^{4}\right)\left(X^{4}+4X^{3}Z-14X^{2}Z^{2}+4XZ^{3}+Z^{4}\right)
 140
                                \frac{\sqrt{14586}X(Y-Z)(Y+Z)\left(Y^2-4YZ+Z^2\right)\left(Y^2+4YZ+Z^2\right)\left(224X^4-160X^2Y^2-160X^2Z^2+15Y^4+30Y^2Z^2+15Z^4\right)}{24X^4-160X^2Y^2-160X^2Z^2+15Y^4+30Y^2Z^2+15Z^4\right)}
                                 \sqrt{14586}Y(X-Z)(X+Z)\left(X^2-4XZ+Z^2\right)\left(X^2+4XZ+Z^2\right)\left(15X^4-160X^2Y^2+30X^2Z^2+224Y^4-160Y^2Z^2+15Z^4\right)
 142
                                 \sqrt{2145}X(Y-Z)(Y+Z)\left(128X^8-768X^6Y^2-768X^6Z^2+1008X^4Y^4+2016X^4Y^2Z^2+1008X^4Z^4-336X^2Y^6-1008X^2Y^4Z^2-1008X^2Y^2Z^4-336X^2Z^6+21Y^8+84Y^6Z^2+126Y^4Z^4+84Y^2Z^6+21Z^8+21Z^8+21Z^6+21Z^8+21Z^6+21Z^8+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+21Z^6+2
 143
                                \sqrt{2145}Y(X-Z)(X+Z)\left(21X^8-336X^6Y^2+84X^6Z^2+1008X^4Y^4-1008X^4Y^2Z^2+126X^4Z^4-768X^2Y^6+2016X^2Y^4Z^2-1008X^2Y^2Z^4+84X^2Z^6+128Y^8-768Y^6Z^2+1008Y^4Z^4-336Y^2Z^6+21Z^8Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^4+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2Z^2+128Y^2+
144
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