No. 14  $D_{2d}$  -42m (-42m setting) [tetragonal] (polar)

表 1  $\operatorname{rank} 0$ 

No. expression 1 1

表 2 rank 1

No.	expression

- 2 z
- $3 \quad x$
- 4 *y*

表 3 rank 2

o.	expression

$$5 \quad -\frac{x^2}{2} - \frac{y^2}{2} + z^2$$

- $\frac{\sqrt{3}(x-y)(x+y)}{2}$
- $\sqrt{3}xy$
- $\sqrt{3}yz$
- 9  $\sqrt{3}xz$

表 4 rank 3

No.	expression	
No.	expression	

- $\sqrt{15}xyz$
- 11

- $\frac{\sqrt{15}z(x-y)(x+y)}{2} \\
  -\frac{z(3x^2+3y^2-2z^2)}{2} \\
  \underline{x(2x^2-3y^2-3z^2)} \\
  -\frac{y(3x^2-2y^2+3z^2)}{2}$ 14
- $\frac{\sqrt{15}x(y-z)(y+z)}{2}$
- $\frac{\sqrt{15}y(x-z)(x+z)}{2}$ 16

表 5 rank 4

No.	expression
17	$\frac{\sqrt{21}\left(x^4 - 3x^2y^2 - 3x^2z^2 + y^4 - 3y^2z^2 + z^4\right)}{6}$
18	$-\frac{\sqrt{15} \left(x^4-12 x^2 y^2+6 x^2 z^2+y^4+6 y^2 z^2-2 z^4\right)}{12}$
19	$\frac{\sqrt{35}xy(x-y)(x+y)}{2}$
20	$\frac{\sqrt{5}(x-y)(x+y)\left(x^2+y^2-6z^2\right)}{4}$
21	$-rac{\sqrt{5}xyig(x^2+y^2-6z^2ig)}{2}$
22	$\frac{\sqrt{35}yz(y-z)(y+z)}{2}$
23	$\frac{\sqrt{35}xz(x-z)(x+z)}{2}$
24	$\frac{\sqrt{5}yz\left(6x^2-y^2-z^2\right)}{2}$
25	$-\frac{\sqrt{5}xz(x^2-6y^2+z^2)}{2}$

表 6 rank 5

No.	expression
26	$\frac{\sqrt{105}xyz(x^2+y^2-2z^2)}{2}$
27	$-\frac{\sqrt{105}z(x-y)(x+y)(x^2+y^2-2z^2)}{4}$
28	$\frac{3\sqrt{35}xyz(x-y)(x+y)}{2}$
29	$\frac{z\left(15x^4 + 30x^2y^2 - 40x^2z^2 + 15y^4 - 40y^2z^2 + 8z^4\right)}{8}$
30	$\frac{3\sqrt{35}z(x^2-2xy-y^2)(x^2+2xy-y^2)}{8}$
31	$\frac{x(8x^4 - 40x^2y^2 - 40x^2z^2 + 15y^4 + 30y^2z^2 + 15z^4)}{8}$
32	$\frac{y(15x^4 - 40x^2y^2 + 30x^2z^2 + 8y^4 - 40y^2z^2 + 15z^4)}{8}$
33	$\frac{3\sqrt{35}x(y^2-2yz-z^2)(y^2+2yz-z^2)}{8}$
34	$\frac{3\sqrt{35}y(x^2-2xz-z^2)(x^2+2xz-z^2)}{8}$
35	$\frac{\sqrt{105}x(y-z)(y+z)(2x^2-y^2-z^2)}{4}$
36	$-\frac{\sqrt{105}y(x-z)(x+z)(x^2-2y^2+z^2)}{4}$

## 表7 rank 6

No. expression 
$$\frac{\sqrt{2\cdot(2x^6-15x^4y^2-15x^4z^2-15x^2y^4+180x^2y^2z^2-15x^2z^4+2y^6-15y^4z^2-15y^2z^4+2z^6)}}{8}$$

$$38 - \frac{\sqrt{14}(x^6-15x^4z^2+15x^2z^4+y^6-15y^4z^2+15y^2z^4-2z^6)}{8}$$

$$39 - \frac{3\sqrt{7}xy(x-y)(x+y)(x^2+y^2-10z^2)}{4}$$

$$40 \frac{\sqrt{2310}(x-y)(x+y)(x^2-2)(x+z)(y-z)(y+z)}{8}$$

$$41 \frac{\sqrt{42}(x-y)(x+y)(x^4-9x^2y^2-5x^2z^2+y^4-5y^2z^2+5z^4)}{8}$$

$$42 \frac{\sqrt{462}xy(x^2-3y^2)(3x^2-y^2)}{16}$$

$$43 \frac{\sqrt{210}xy(x^4+2x^2y^2-16x^2z^2+y^4-16y^2z^2+16z^4)}{16}$$

$$44 \frac{3\sqrt{7}yz(y-z)(y+z)(10x^2-y^2-z^2)}{4}$$

$$45 - \frac{3\sqrt{7}xz(x-z)(x+z)(x^2-10y^2+z^2)}{4}$$

$$46 \frac{\sqrt{462}yz(y^2-3z^2)(3y^2-z^2)}{16}$$

$$47 \frac{\sqrt{462}xz(x^2-3z^2)(3x^2-z^2)}{16}$$

$$48 \frac{\sqrt{210}xz(16x^4-16x^2y^2-16x^2z^2+y^4+2y^2z^2+z^4)}{16}$$

$$49 \frac{\sqrt{210}xz(x^4-16x^2y^2+2x^2z^2+16y^4-16y^2z^2+z^4)}{16}$$

表 8  $\operatorname{rank} 7$ 

No.	expression
50	$\frac{\sqrt{91}xyz(3x^4 - 5x^2y^2 - 5x^2z^2 + 3y^4 - 5y^2z^2 + 3z^4)}{2}$
51	$-\frac{\sqrt{77}xyz\left(3x^4-20x^2y^2+10x^2z^2+3y^4+10y^2z^2-6z^4\right)}{4}$
52	$\frac{\sqrt{6006}z(x-y)(x+y)(x^2-4xy+y^2)(x^2+4xy+y^2)}{22}$
53	$\frac{\sqrt{42}z(x-y)(x+y)\left(15x^4+30x^2y^2-80x^2z^2+15y^4-80y^2z^2+48z^4\right)}{32}$
54	$-\frac{\sqrt{231}xyz(x-y)(x+y)\left(3x^2+3y^2-10z^2\right)}{4}$
55	
56	$-\frac{\sqrt{231}z(x^2-2xy-y^2)(x^2+2xy-y^2)(3x^2+3y^2-10z^2)}{16}$
57	$\frac{16}{x\left(16x^6 - 168x^4y^2 - 168x^4z^2 + 210x^2y^4 + 420x^2y^2z^2 + 210x^2z^4 - 35y^6 - 105y^4z^2 - 105y^2z^4 - 35z^6\right)}$
•	$ y \left(35x^6 - 210x^4y^2 + 105x^4z^2 + 168x^2y^4 - 420x^2y^2z^2 + 105x^2z^4 - 16y^6 + 168y^4z^2 - 210y^2z^4 + 35z^6\right) $
58	$\frac{16}{\sqrt{231}x(10x^2 - 3y^2 - 3z^2)(y^2 - 2yz - z^2)(y^2 + 2yz - z^2)}$
59	10
60	$-\frac{\sqrt{231}y(x^2-2xz-z^2)(x^2+2xz-z^2)(3x^2-10y^2+3z^2)}{16}$
61	$\frac{\sqrt{6006}x(y-z)(y+z)(y^2-4yz+z^2)(y^2+4yz+z^2)}{32}$
62	$\frac{\sqrt{6006}y(x-z)(x+z)(x^2-4xz+z^2)(x^2+4xz+z^2)}{22}$
63	$\frac{\sqrt{42}x(y-z)(y+z)\left(48x^4-80x^2y^2-80x^2z^2+15y^4+30y^2z^2+15z^4\right)}{232}$
64	$\frac{\sqrt{42}y(x-z)(x+z)\left(15x^4 - 80x^2y^2 + 30x^2z^2 + 48y^4 - 80y^2z^2 + 15z^4\right)}{32}$

表 9 rank 8

```
No. expression
                                    \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)
  65
                                    \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)
     66
                                    \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)}
    67
                                  \frac{3\sqrt{715}xy(x-y)(x+y)\left(x^{2}-2xy-y^{2}\right)\left(x^{2}+2xy-y^{2}\right)}{16}
     68
                                \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}
     69
                                            \frac{\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)}{2^{-4}}
     70
                                         \left[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)\right]
     71
                                           \frac{\sqrt{858}xy \left(x^2-3 y^2\right) \left(3 x^2-y^2\right) \left(x^2+y^2-14 z^2\right)}{32}
     72
                                         \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)}{32}
     73
                             \frac{3\sqrt{715}yz(y-z)(y+z)\left(y^2-2yz-z^2\right)\left(y^2+2yz-z^2\right)}{16}
\frac{3\sqrt{715}xz(x-z)(x+z)\left(x^2-2xz-z^2\right)\left(x^2+2xz-z^2\right)}{16}
\frac{3\sqrt{77}yz(y-z)(y+z)\left(40x^4-24x^2y^2-24x^2z^2+y^4+2y^2z^2+z^4\right)}{3\sqrt{77}}
    74
     75
     76
                                  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)
     77
                                   \frac{\sqrt{858}yz(y^2 - 3z^2)(3y^2 - z^2)(14x^2 - y^2 - z^2)}{32}
     78
                               \frac{32}{\sqrt{858}xz\left(x^2-3z^2\right)\left(3x^2-z^2\right)\left(x^2-14y^2+z^2\right)} \\ 32\\ 3\sqrt{70}yz\left(32x^6-80x^4y^2-80x^4z^2+30x^2y^4+60x^2y^2z^2+30x^2z^4-y^6-3y^4z^2-3y^2z^4-z^6\right)} \\ \frac{32}{\sqrt{300}x^2} \frac
     79
     80
                                         -\frac{3 \sqrt{20} x z \left(x^{6}-30 x^{4} y^{2}+3 x^{4} z^{2}+80 x^{2} y^{4}-60 x^{2} y^{2} z^{2}+3 x^{2} z^{4}-32 y^{6}+80 y^{4} z^{2}-30 y^{2} z^{4}+z^{6}\right)}{32}
    81
```

表 10 rank 9

```
expression
No.
                    \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)
  82
                    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)
                         \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)
                         3\sqrt{110}z(x-y)(x+y)\left(7x^6+21x^4y^2-70x^4z^2+21x^2y^4-140x^2y^2z^2+112x^2z^4+7y^6-70y^4z^2+112y^2z^4-32z^6\right)
  85
                     \sqrt{510510}xyz(x-y)(x+y)(x-z)(x+z)(y-z)(y+z)
  86
                     \sqrt{4290}xyz(x-y)(x+y)(3x^4-11x^2y^2-7x^2z^2+3y^4-7y^2z^2+7z^4)
  87
                    z \left(315x^{8} + 1260x^{6}y^{2} - 3360x^{6}z^{2} + 1890x^{4}y^{4} - 10080x^{4}y^{2}z^{2} + 6048x^{4}z^{4} + 1260x^{2}y^{6} - 10080x^{2}y^{4}z^{2} + 12096x^{2}y^{2}z^{4} - 2304x^{2}z^{6} + 315y^{8} - 3360y^{6}z^{2} + 6048y^{4}z^{4} - 2304y^{2}z^{6} + 128z^{8}\right)
                    \frac{3\sqrt{12155}z\left(x^{4}-4x^{3}y-6x^{2}y^{2}+4xy^{3}+y^{4}\right)\left(x^{4}+4x^{3}y-6x^{2}y^{2}-4xy^{3}+y^{4}\right)}{2}
  89
                    3\sqrt{5005}z \left(x^2 - 2xy - y^2\right) \left(x^2 + 2xy - y^2\right) \left(x^4 + 2x^2y^2 - 8x^2z^2 + y^4 - 8y^2z^2 + 8z^4\right)
  90
                    x \left(128x^8 - 2304x^6y^2 - 2304x^6z^2 + 6048x^4y^4 + 12096x^4y^2z^2 + 6048x^4z^4 - 3360x^2y^6 - 10080x^2y^4z^2 - 10080x^2y^2z^4 - 3360x^2z^6 + 315y^8 + 1260y^6z^2 + 1890y^4z^4 + 1260y^2z^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^2y^2z^4 + 1260x^2z^6 + 128y^8 - 2304y^6z^2 + 6048y^4z^4 - 3360y^2z^6 + 128y^8 - 2304y^6z^2 + 6048y^4z^4 - 3360y^2z^6 + 128y^8 - 2304y^6z^2 + 6048y^4z^4 - 3360y^2z^6 + 128y^8 - 2304y^6z^2 + 128y^6z^2 + 128y^6z^2
 92
                    3\sqrt{12155}x\left(y^4-4y^3z-6y^2z^2+4yz^3+z^4\right)\left(y^4+4y^3z-6y^2z^2-4yz^3+z^4\right)
  93
                   3\sqrt{12155}y\left(x^{4}-4x^{3}z-6x^{2}z^{2}+4xz^{3}+z^{4}\right)\left(x^{4}+4x^{3}z-6x^{2}z^{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 \left(x^2 - 2xz - z^2\right) \left(x^2 + 2xz - z^2\right) \left(x^4 - 8x^2y^2 + 2x^2z^2 + 8y^4 - 8y^2z^2 + z^4\right)
  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)
                    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^4y^2+21x^4z^2+112x^2y^4-140x^2y^2z^2+21x^2z^4-32y^6+112y^4z^2-70y^2z^4+7z^6\right)
100
```

```
No.
                    expression
                        \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^4z^2 - 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^6z^6 + 45y^2z^8 + 2y^{10} - 45y^8z^2 + 42y^6z^4 + 42y^6z^6 + 42y^6z^4 + 42y^6z^6 + 42y^
101
                              \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)
 102
                              \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) + 3y^{10} \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) + 3y^{10} \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^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) + 3y^{10} \cdot \left(3x^{10} - 96x^8y^2 - 39x^8z^2 - 42x^6y^4 - 182y^4z^6 + 135y^2z^8 - 6z^{10}\right) + 3y^{10} \cdot \left(3x^{10} - 96x^8y^2 - 39x^8z^2 - 24x^6y^4 - 182y^4z^6 - 182y^4z^6
 103
                              \sqrt{12155}xy(x-y)(x+y)\Big(x^2+y^2-18z^2\Big)\Big(x^2-2xy-y^2\Big)\Big(x^2+2xy-y^2\Big)
 104
                              \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)
 105
                        \sqrt{27170}(x-y)(x+y)(x-z)(x+z)(y-z)(y+z)\left(3x^4-11x^2y^2-11x^2z^2+3y^4-11y^2z^2+3z^4\right)
 106
                        \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)
 107
                        \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)
 108
                        \frac{\sqrt{92378}xy\left(x^{4}-10x^{2}y^{2}+5y^{4}\right)\left(5x^{4}-10x^{2}y^{2}+y^{4}\right)}{}
 109
                        \sqrt{4290}xy \left(x^2 - 3y^2\right) \left(3x^2 - y^2\right) \left(3x^4 + 6x^2y^2 - 96x^2z^2 + 3y^4 - 96y^2z^2 + 224z^4\right)
 110
                        \sqrt{165}xy\left(7x^{8} + 28x^{6}y^{2} - 336x^{6}z^{2} + 42x^{4}y^{4} - 1008x^{4}y^{2}z^{2} + 1680x^{4}z^{4} + 28x^{2}y^{6} - 1008x^{2}y^{4}z^{2} + 3360x^{2}y^{2}z^{4} - 1792x^{2}z^{6} + 7y^{8} - 336y^{6}z^{2} + 1680y^{4}z^{4} - 1792y^{2}z^{6} + 384z^{8}\right)
 111
                        \sqrt{12155}yz(y-z)(y+z)(18x^2-y^2-z^2)(y^2-2yz-z^2)(y^2+2yz-z^2)
 112
                              \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)
 113
                        \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)
 114
                              \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)
 115
                        \sqrt{92378}yz\left(y^4-10y^2z^2+5z^4\right)\left(5y^4-10y^2z^2+z^4\right)
 116
                        \sqrt{92378}xz\left(x^4-10x^2z^2+5z^4\right)\left(5x^4-10x^2z^2+z^4\right)
 117
                        \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)
 118
                        \sqrt{4290}xz(x^2-3z^2)(3x^2-z^2)(3x^4-96x^2y^2+6x^2z^2+224y^4-96y^2z^2+3z^4)
 119
                        \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\right)
 120
                        \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 + 7z^8\right)
 121
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No.
                         expression
                               \sqrt{2431}xyz\left(5x^{8} - 30x^{6}y^{2} - 30x^{6}z^{2} + 63x^{4}y^{4} + 63x^{4}z^{4} - 30x^{2}y^{6} - 30x^{2}z^{6} + 5y^{8} - 30y^{6}z^{2} + 63y^{4}z^{4} - 30y^{2}z^{6} + 5z^{8}\right)
122
                                      \sqrt{230945}xyz\left(x^{8} - 6x^{6}y^{2} - 6x^{6}z^{2} + 42x^{4}y^{2}z^{2} - 6x^{2}y^{6} + 42x^{2}y^{4}z^{2} - 84x^{2}y^{2}z^{4} + 12x^{2}z^{6} + y^{8} - 6y^{6}z^{2} + 12y^{2}z^{6} - 2z^{8}\right)
123
                                      \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)
124
                               \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)
125
                               \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)
126
                                \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)
127
                                      \sqrt{692835}xyz(x-y)(x+y)\Big(x^2+y^2-6z^2\Big)\Big(x^2-2xy-y^2\Big)\Big(x^2+2xy-y^2\Big)
128
                                     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)
129
                                      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^4y^6z^4 - 46200x^2y^6z^2 + 110880x^2y^4z^4 - 63360x^2y^2z^6 + 7040x^2z^8 + 693y^{10} - 11550y^8z^2 + 36960y^6z^4 - 31680y^4z^6 + 7040y^2z^8 - 256z^{10}\right)
130
                                      \sqrt{692835}z \left(x^2 + y^2 - 6z^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)
131
                                     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)
132
                              x \left(256x^{10} - 7040x^8y^2 - 7040x^8y^2 - 7040x^8y^2 + 31680x^6y^4 + 63360x^6y^2z^2 + 31680x^6z^4 - 36960x^4y^6 - 110880x^4y^2z^4 - 36960x^4z^6 + 11550x^2y^8 + 46200x^2y^6z^2 + 69300x^2y^4z^4 + 46200x^2y^2z^6 + 11550x^2z^8 - 693y^{10} - 3465y^8z^2 - 6930y^6z^4 - 6930y^4z^6 - 3465y^2z^8 - 693z^{10}\right) + 365x^2y^2 + 31680x^6y^4 + 36360x^6y^2z^2 + 31680x^6y^2z^2 + 31680x^6y^2z^2
133
                                      y \left(693x^{10} - 11550x^8y^2 + 3465x^8z^2 + 36960x^6y^4 - 46200x^6y^2z^2 + 6930x^6z^4 - 31680x^4y^6 + 110880x^4y^4z^2 - 69300x^4y^2z^4 + 6930x^4z^6 + 7040x^2y^8 - 63360x^2y^6z^2 + 110880x^2y^4z^4 - 46200x^2y^2z^6 + 3465x^2z^8 - 256y^{10} + 7040y^8z^2 - 31680y^6z^4 + 36960y^4z^6 - 11550y^2z^8 + 693z^{10}\right) + 360x^2y^6z^2 + 360x^2y^2z^2 + 360x^2y^2z^
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)
137
                                     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) \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) \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) \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) \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) \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) \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) \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) \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) \left(5x^6 - 70x^4y^2 + 15x^4z^2 + 168x^2y^4 - 140x^2y^2z^2 + 15x^2y^4 - 168y^4z^2 - 70y^2z^4 + 15x^4z^2 + 168y^4z^2 - 70y^2z^4 + 15x^4z^2 + 168y^4z^2 - 70y^2z^4 + 16y^4z^2 - 70y^2z^4 + 16y^2z^4 + 16y^2z^4 - 16y^2z^4 + 16y^2z^
138
                                \sqrt{1939938}x(y-z)(y+z)\left(y^4-4y^3z-14y^2z^2-4yz^3+z^4\right)\left(y^4+4y^3z-14y^2z^2+4yz^3+z^4\right)
139
                                \sqrt{1939938}y(x-z)(x+z)(x^4-4x^3z-14x^2z^2-4xz^3+z^4)(x^4+4x^3z-14x^2z^2+4xz^3+z^4)
140
                              \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)
141
                               \sqrt{14586}y(x-z)(x+z)(x^2-4xz+z^2)(x^2+4xz+z^2)(15x^4-160x^2y^2+30x^2z^2+224y^4-160y^2z^2+15z^4)
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\right)
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+2128y^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+2128y^6+2016x^2y^4z^2+1008x^2y^2z^4+84x^2z^6+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^4z^2+128y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2y^6+2016x^2
144
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