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	$-\frac{x^2}{2} - \frac{y^2}{2} + z^2$
6	$\frac{\sqrt{3}(x-y)(x+y)}{2}$
7	$\sqrt{3}xy$
8	$\sqrt{3}yz$
9	$-\sqrt{3}xz$

表 4 rank 3

No.	expression
10	$-\frac{z(3x^2+3y^2-2z^2)}{2}$
11	$\sqrt{15}xyz$
12	$\frac{\sqrt{15}z(x-y)(x+y)}{2}$
13	$\frac{x(2x^2-3y^2-3z^2)}{2}$
14	$\frac{y(-3x^2+2y^2-3z^2)}{2}$
15	$\frac{\sqrt{15}x\left(y^2-z^2\right)}{2}$
16	$\frac{\sqrt{15}y\left(x^2-z^2\right)}{2}$

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	$\frac{\sqrt{5}(x-y)(x+y)(x^2+y^2-6z^2)}{4}$
21	$-\frac{\sqrt{5}xy(x^2+y^2-6z^2)}{2}$
22	$\frac{\sqrt{35}yz(y^2-z^2)}{2}$
23	$\frac{\sqrt{35}xz\left(-x^2+z^2\right)}{2}$
24	$\frac{\sqrt{5}yz\left(6x^2-y^2-z^2\right)}{2}$
25	$\frac{\sqrt{5}xz\left(x^2-6y^2+z^2\right)}{2}$

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	$\frac{\sqrt{105}xyz(x^2+y^2-2z^2)}{2}$
30	$-\frac{\sqrt{105}z(x-y)(x+y)(x^2+y^2-2z^2)}{4}$
31	$\frac{x(8x^4 - 40x^2y^2 - 40x^2z^2 + 15y^4 + 30y^2z^2 + 15z^4)}{2}$
32	$\frac{y(15x^4 - 40x^2y^2 + 30x^2z^2 + 8y^4 - 40y^2z^2 + 15z^4)}{2}$
33	$\frac{3\sqrt{35}x(y^4-6y^2z^2+z^4)}{8}$
34	$\frac{3\sqrt{35}y\left(x^4 - 6x^2z^2 + z^4\right)}{8}$
35	$\frac{\sqrt{105}x\left(2x^{2}y^{2}-2x^{2}z^{2}-y^{4}+z^{4}\right)}{4}$
36	$\frac{\sqrt{105}y\left(-x^4+2x^2y^2-2y^2z^2+z^4\right)}{4}$

表7 rank 6

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

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

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

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

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

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

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

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

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

$$46 \frac{\sqrt{462}yz(3y^4-10y^2z^2+3z^4)}{16}$$

$$47 \frac{\sqrt{462}xz(-3x^4+16x^2y^2-16x^2z^2+y^4+2y^2z^2+z^4)}{16}$$

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

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

表 8 $\operatorname{rank} 7$

No.	expression
50	$-\frac{\sqrt{231}xyz(x-y)(x+y)(3x^2+3y^2-10z^2)}{4}$
51	$-\frac{z \left(35 x^6+105 x^4 y^2-210 x^4 z^2+105 x^2 y^4-420 x^2 y^2 z^2+168 x^2 z^4+35 y^6-210 y^4 z^2+168 y^2 z^4-16 z^6\right)}{200 x^2 y^2 z^2}$
52	$-\frac{\sqrt{231}z(x^2-2xy-y^2)(x^2+2xy-y^2)(3x^2+3y^2-10z^2)}{16}$
53	$\frac{16}{\sqrt{91}xyz\left(3x^4 - 5x^2y^2 - 5x^2z^2 + 3y^4 - 5y^2z^2 + 3z^4\right)}$
54	$-\frac{\sqrt{77}xyz\left(3x^4-20x^2y^2+10x^2z^2+3y^4+10y^2z^2-6z^4\right)}{4}$
55	$\frac{4}{\sqrt{6006}z(x-y)(x+y)\left(x^2-4xy+y^2\right)\left(x^2+4xy+y^2\right)}$
	$\frac{32}{\sqrt{42}z(x-y)(x+y)\left(15x^4+30x^2y^2-80x^2z^2+15y^4-80y^2z^2+48z^4\right)}$
56	$\frac{32}{x\left(16x^6 - 168x^4y^2 - 168x^4z^2 + 210x^2y^4 + 420x^2y^2z^2 + 210x^2z^4 - 35y^6 - 105y^4z^2 - 105y^2z^4 - 35z^6\right)}$
57	$y\left(-35x^{6}+210x^{4}y^{2}-105x^{4}z^{2}-168x^{2}y^{4}+420x^{2}y^{2}z^{2}-105x^{2}z^{4}+16y^{6}-168y^{4}z^{2}+210y^{2}z^{4}-35z^{6}\right)$
58	$\frac{16}{\sqrt{231}x\left(10x^2y^4 - 60x^2y^2z^2 + 10x^2z^4 - 3y^6 + 15y^4z^2 + 15y^2z^4 - 3z^6\right)}$
59	$\frac{16}{\sqrt{231}y\left(-3x^6+10x^4y^2+15x^4z^2-60x^2y^2z^2+15x^2z^4+10y^2z^4-3z^6\right)}$
60	
61	$\frac{\sqrt{6006}x(y^6 - 15y^4z^2 + 15y^2z^4 - z^6)}{32}$
62	$\frac{\sqrt{6006}y(x^6 - 15x^4z^2 + 15x^2z^4 - z^6)}{32}$
63	$\frac{\sqrt{42}x\left(48x^4y^2 - 48x^4z^2 - 80x^2y^4 + 80x^2z^4 + 15y^6 + 15y^4z^2 - 15y^2z^4 - 15z^6\right)}{23}$
64	$\frac{\sqrt{42}y\left(15x^6 - 80x^4y^2 + 15x^4z^2 + 48x^2y^4 - 15x^2z^4 - 48y^4z^2 + 80y^2z^4 - 15z^6\right)}{32}$

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
           3\sqrt{77}xy(x-y)(x+y)\left(x^{4}+2x^{2}y^{2}-24x^{2}z^{2}+y^{4}-24y^{2}z^{2}+40z^{4}\right)
 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)}{(x^2+4xy+y^2)}
 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
                 \sqrt{858} xy \left(x^2 - 3y^2\right) \left(3x^2 - y^2\right) \left(x^2 + y^2 - 14z^2\right) 
 72
              \frac{32}{3\sqrt{70}xy\left(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\right)}
 73
           \scriptstyle 3\sqrt{715}yz\left(y^6-7y^4z^2+7y^2z^4-z^6\right)
 74
            3\sqrt{715}xz\left(-x^6+7x^4z^2-7x^2z^4+z^6\right)
 75
            3\sqrt{77}yz\left(40x^4y^2-40x^4z^2-24x^2y^4+24x^2z^4+y^6+y^4z^2-y^2z^4-z^6\right)
 76
            3\sqrt{77}xz\left(-x^{6} + 24x^{4}y^{2} - x^{4}z^{2} - 40x^{2}y^{4} + x^{2}z^{4} + 40y^{4}z^{2} - 24y^{2}z^{4} + z^{6}\right)
 77
             \sqrt{858}yz\left(42x^2y^4-140x^2y^2z^2+42x^2z^4-3y^6+7y^4z^2+7y^2z^4-3z^6\right)
 78
             \sqrt{858}xz \Big(3x^6 - 42x^4y^2 - 7x^4z^2 + 140x^2y^2z^2 - 7x^2z^4 - 42y^2z^4 + 3z^6\Big)
 79
            \underbrace{3\sqrt{70}yz \Big(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\Big)}_{}
 80
            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)
 81
```

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)\left(3x^4-11x^2y^2-7x^2z^2+3y^4-7y^2z^2+7z^4\right)
           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)
           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)
           \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}
 86
            \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)
 87
           \underbrace{3\sqrt{1430}xyz\left(x^{6}-7x^{4}z^{2}+7x^{2}z^{4}+y^{6}-7y^{4}z^{2}+7y^{2}z^{4}-2z^{6}\right)}
              \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)
 89
              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)
 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)
 92
           3\sqrt{12155}x\left(y^{8}-28y^{6}z^{2}+70y^{4}z^{4}-28y^{2}z^{6}+z^{8}\right)
           3\sqrt{12155}y(x^8-28x^6z^2+70x^4z^4-28x^2z^6+z^8)
 94
           3\sqrt{5005}x\left(8x^4y^4 - 48x^4y^2z^2 + 8x^4z^4 - 8x^2y^6 + 40x^2y^4z^2 + 40x^2y^2z^4 - 8x^2z^6 + y^8 - 4y^6z^2 - 10y^4z^4 - 4y^2z^6 + z^8\right)
 95
           3\sqrt{5005}y\left(x^8 - 8x^6y^2 - 4x^6z^2 + 8x^4y^4 + 40x^4y^2z^2 - 10x^4z^4 - 48x^2y^4z^2 + 40x^2y^2z^4 - 4x^2z^6 + 8y^4z^4 - 8y^2z^6 + z^8\right)
 96
            \sqrt{4290}x\left(14x^2y^6 - 210x^2y^4z^2 + 210x^2y^2z^4 - 14x^2z^6 - 3y^8 + 42y^6z^2 - 42y^2z^6 + 3z^8\right)
 97
           \frac{\sqrt{4290}y \left(-3 x^8+14 x^6 y^2+42 x^6 z^2-210 x^4 y^2 z^2+210 x^2 y^2 z^4-42 x^2 z^6-14 y^2 z^6+3 z^8\right)}{64}
           3\sqrt{110}x\left(32x^6y^2 - 32x^6z^2 - 112x^4y^4 + 112x^4z^4 + 70x^2y^6 + 70x^2y^4z^2 - 70x^2y^2z^4 - 70x^2z^6 - 7y^8 - 14y^6z^2 + 14y^2z^6 + 7z^8\right)
 99
           3\sqrt{110}y\left(-7x^{8}+70x^{6}y^{2}-14x^{6}z^{2}-112x^{4}y^{4}+70x^{4}y^{2}z^{2}+32x^{2}y^{6}-70x^{2}y^{2}z^{4}+14x^{2}z^{6}-32y^{6}z^{2}+112y^{4}z^{4}-70y^{2}z^{6}+7z^{8}\right)
100
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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^
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 - 182x^4y^6 - 6720x^4y^4z^4 - 182x^4z^6 - 96x^2y^8 + 1344x^2y^6z^2 + 3360x^2y^4z^4 - 182x^4z^6 - 96x^2y^8 + 1344x^2y^6z^2 - 182x^4z^6 - 96x^2y^8 + 134x^2y^6z^2 - 182x^2y^6z^2 - 182x
 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\Big(18x^2y^6 - 126x^2y^4z^2 + 126x^2y^2z^4 - 18x^2z^6 - y^8 + 6y^6z^2 - 6y^2z^6 + z^8\Big)
 112
                       \sqrt{12155}xz\left(x^{8}-18x^{6}y^{2}-6x^{6}z^{2}+126x^{4}y^{2}z^{2}-126x^{2}y^{2}z^{4}+6x^{2}z^{6}+18y^{2}z^{6}-z^{8}\right)
 113
                       \sqrt{2145}yz\left(112x^6y^2 - 112x^6z^2 - 168x^4y^4 + 168x^4z^4 + 42x^2y^6 + 42x^2y^4z^2 - 42x^2y^2z^4 - 42x^2z^6 - y^8 - 2y^6z^2 + 2y^2z^6 + z^8\right)
 114
                       \sqrt{2145}xz\left(x^{8} - 42x^{6}y^{2} + 2x^{6}z^{2} + 168x^{4}y^{4} - 42x^{4}y^{2}z^{2} - 112x^{2}y^{6} + 42x^{2}y^{2}z^{4} - 2x^{2}z^{6} + 112y^{6}z^{2} - 168y^{4}z^{4} + 42y^{2}z^{6} - z^{8}\right)
 115
                       \sqrt{92378}yz\left(5y^8-60y^6z^2+126y^4z^4-60y^2z^6+5z^8\right)
 116
                       \sqrt{92378}xz(-5x^8+60x^6z^2-126x^4z^4+60x^2z^6-5z^8)
 117
                       \sqrt{4290}yz\left(672x^4y^4 - 2240x^4y^2z^2 + 672x^4z^4 - 288x^2y^6 + 672x^2y^4z^2 + 672x^2y^2z^4 - 288x^2z^6 + 9y^8 - 12y^6z^2 - 42y^4z^4 - 12y^2z^6 + 9z^8\right)
 118
                       \sqrt{4290}xz\left(-9x^8+288x^6y^2+12x^6z^2-672x^4y^4-672x^4y^2z^2+42x^4z^4+2240x^2y^4z^2-672x^2y^2z^4+12x^2z^6-672y^4z^4+288y^2z^6-9z^8\right)
 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{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\left(693x^{10} + 3465x^{8}y^{2} - 11550x^{8}z^{2} + 6930x^{6}y^{4} - 46200x^{6}y^{2}z^{2} + 36960x^{6}z^{4} + 6930x^{4}y^{6} - 69300x^{4}y^{4}z^{2} + 110880x^{4}y^{2}z^{4} - 31680x^{4}y^{6}z^{2} + 110880x^{2}y^{4}z^{4} - 63360x^{2}y^{2}z^{6} + 7040x^{2}z^{8} + 693y^{10} - 11550y^{8}z^{2} + 36960y^{6}z^{4} - 31680y^{4}z^{6} + 7040y^{2}z^{8} - 256z^{10}y^{2}z^{6} + 7040y^{2}z^{8} + 7040y^{2}z^{8}
124
                                   \sqrt{692835}z \left(x^2+y^2-6z^2\right) \left(x^4-4 \underline{x}^3 y-6 x^2 y^2+4 x y^3+y^4\right) \left(x^4+4 x^3 y-6 x^2 y^2-4 x y^3+y^4\right)
125
                                  3\sqrt{1001}z\left(x^2-2xy-y^2\right)\left(x^2+2xy-y^2\right)\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)
126
                              \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)
127
                                    \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)
128
                                   \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)
129
                             \frac{\sqrt{1939938}z(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}
130
                            \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)
131
                            \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)
132
                           x \left(256x^{10} - 7040x^8y^2 - 7040x^8y^2 - 7040x^8y^2 + 31680x^6y^4 + 63360x^6y^2z^2 + 31680x^6y^4 - 63360x^4y^6 - 110880x^4y^4z^2 - 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 - 693y^{10} - 3465y^8z^2 - 6930y^6z^4 - 6930y^6z^
133
                            y\left(-693x^{10} + 11550x^8y^2 - 3465x^8z^2 - 36960x^6y^4 + 46200x^6y^2z^2 - 6930x^6z^4 + 31680x^4y^6z^2 + 69300x^4y^2z^4 - 6930x^4y^2z^4 - 6930x^4y^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)
134
                              \sqrt{692835}x\left(6x^{2}y^{8} - 168x^{2}y^{6}z^{2} + 420x^{2}y^{4}z^{4} - 168x^{2}y^{2}z^{6} + 6x^{2}z^{8} - y^{10} + 27y^{8}z^{2} - 42y^{6}z^{4} - 42y^{4}z^{6} + 27y^{2}z^{8} - z^{10}\right)
135
                              \sqrt{692835}y\left(-x^{10}+6x^8y^2+27x^8z^2-168x^6y^2z^2-42x^6z^4+420x^4y^2z^4-42x^4z^6-168x^2y^2z^6+27x^2z^8+6y^2z^8-z^{10}\right)
136
                           3\sqrt{1001}x\left(80x^{6}y^{4} - 480x^{6}y^{2}z^{2} + 80x^{6}z^{4} - 168x^{4}y^{6} + 840x^{4}y^{4}z^{2} + 840x^{4}y^{2}z^{4} - 168x^{4}z^{6} + 70x^{2}y^{8} - 280x^{2}y^{6}z^{2} - 700x^{2}y^{4}z^{4} - 280x^{2}y^{2}z^{6} + 70x^{2}z^{8} - 5y^{10} + 15y^{8}z^{2} + 70y^{6}z^{4} + 70y^{4}z^{6} + 15y^{2}z^{8} - 5z^{10}\right)
137
                           3\sqrt{1001}y\left(-5x^{10} + 70x^8y^2 + 15x^8z^2 - 168x^6y^4 - 280x^6y^2z^2 + 70x^6z^4 + 80x^4y^6 + 840x^4y^4z^2 - 700x^4y^2z^4 + 70x^4z^6 - 480x^2y^6z^2 + 840x^2y^4z^4 - 280x^2y^2z^6 + 15x^2z^8 + 80y^6z^4 - 168y^4z^6 + 70y^2z^8 - 5z^{10}\right)
138
                             \sqrt{1939938}x(y^{10}-45y^8z^2+210y^6z^4-210y^4z^6+45y^2z^8-z^{10})
139
                                                                                                                         512
                              \sqrt{1939938}y(x^{10}-45x^8z^2+210x^6z^4-210x^4z^6+45x^2z^8-z^{10})
140
                                                                                                                         512
                             \sqrt{14586}x \left(224x^4y^6 - 3360x^4y^4z^2 + 3360x^4y^2z^4 - 224x^4z^6 - 160x^2y^8 + 2240x^2y^6z^2 - 2240x^2y^2z^6 + 160x^2z^8 + 15y^{10} - 195y^8z^2 - 210y^6z^4 + 210y^4z^6 + 195y^2z^8 - 15z^{10}\right)
141
                              \sqrt{14586}y \left(15x^{10} - 160x^8y^2 - 195x^8z^2 + 224x^6y^4 + 2240x^6y^2z^2 - 210x^6z^4 - 3360x^4y^4z^2 + 210x^4z^6 + 3360x^2y^4z^4 - 2240x^2y^2z^6 + 195x^2z^8 - 224y^4z^6 + 160y^2z^8 - 15z^{10}\right)
142
                                                                                                                                                                                                                                                                                           512
                             \sqrt{2145}x \left(128x^8y^2 - 128x^8z^2 - 768x^6y^4 + 768x^6z^4 + 1008x^4y^6 + 1008x^4y^4z^2 - 1008x^4y^2z^4 - 1008
143
                            \sqrt{2145}y \left(21x^{10} - 336x^8y^2 + 63x^8z^2 + 1008x^6y^4 - 672x^6y^2z^2 + 42x^6z^4 - 768x^4y^6 + 1008x^4y^4z^2 - 42x^4z^6 + 128x^2y^8 - 1008x^2y^4z^4 + 672x^2y^2z^6 - 63x^2z^8 - 128y^8z^2 + 768y^6z^4 - 1008y^4z^6 + 336y^2z^8 - 212y^{10}z^2 + 212
144
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