No. 18 D_3 312 (312 setting) [trigonal] (polar)

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

$$6 \quad \sqrt{3}yz$$

$$7 \quad -\sqrt{3}xz$$

$$8 \quad -\sqrt{3}xy$$

表 4 rank 3

No. expression $ \frac{\sqrt{10}y(3x^2 - y^2)}{4} $ 11 $ -\frac{z(3x^2 + 3y^2 - 2z^2)}{2} $ 12 $ \frac{\sqrt{10}x(x^2 - 3y^2)}{4} $ 13 $ -\frac{\sqrt{6}x(x^2 + y^2 - 4z^2)}{4} $ 14 $ -\frac{\sqrt{6}y(x^2 + y^2 - 4z^2)}{4} $ 15 $ \frac{\sqrt{15}z(x - y)(x + y)}{2} $ 16 $ -\sqrt{15}xyz $		
$ \begin{array}{rcl} 10 & \frac{4}{4} \\ 11 & -\frac{z(3x^2+3y^2-2z^2)}{2} \\ 12 & \frac{\sqrt{10}x(x^2-3y^2)}{4} \\ 13 & -\frac{\sqrt{6}x(x^2+y^2-4z^2)}{4} \\ 14 & -\frac{\sqrt{6}y(x^2+y^2-4z^2)}{4} \\ 15 & \frac{\sqrt{15}z(x-y)(x+y)}{2} \end{array} $	No.	expression
$ \begin{array}{rcl} 11 & -\frac{2}{4} \\ 12 & \frac{\sqrt{10}x(x^2 - 3y^2)}{4} \\ 13 & -\frac{\sqrt{6}x(x^2 + y^2 - 4z^2)}{4} \\ 14 & -\frac{\sqrt{6}y(x^2 + y^2 - 4z^2)}{4} \\ 15 & \frac{\sqrt{15}z(x - y)(x + y)}{2} \end{array} $	10	$\frac{\sqrt{10}y(3x^2-y^2)}{4}$
12 $\frac{4}{\sqrt{6x(x^2+y^2-4z^2)}}$ 14 $-\frac{\sqrt{6y(x^2+y^2-4z^2)}}{4}$ 15 $\frac{\sqrt{15z(x-y)(x+y)}}{2}$	11	$-\frac{z(3x^2+3y^2-2z^2)}{2}$
$ \begin{array}{rcl} 13 & -\frac{4}{4} \\ 14 & -\frac{\sqrt{6}y(x^2+y^2-4z^2)}{4} \\ 15 & \frac{\sqrt{15}z(x-y)(x+y)}{2} \end{array} $	12	$\frac{\sqrt{10}x\left(x^2-3y^2\right)}{4}$
$ \begin{array}{ccc} 14 & -\frac{4}{4} \\ 15 & \frac{\sqrt{15}z(x-y)(x+y)}{2} \end{array} $	13	$-\frac{\sqrt{6}x(x^2+y^2-4z^2)}{4}$
	14	$-\frac{\sqrt{6}y(x^2+y^2-4z^2)}{4}$
	15	$\frac{\sqrt{15}z(x-y)(x+y)}{\sqrt{15}z(x-y)(x+y)}$
	16	_

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	$\frac{\sqrt{70}xz(x^2-3y^2)}{4}$
19	$\frac{\sqrt{70}yz\left(3x^2-y^2\right)}{4}$
20	$-\frac{\sqrt{10}yz(3x^2+3y^2-4z^2)}{4}$
21	$\frac{\sqrt{10}xz\left(3x^2+3y^2-4z^2\right)}{4}$
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	$\frac{\sqrt{5}(x-y)(x+y)(x^2+y^2-6z^2)}{4}$

表 6 rank 5

	20 Tank 0
No.	expression
26	$-\frac{\sqrt{70}y(3x^2-y^2)(x^2+y^2-8z^2)}{16}$
27	$\frac{z\left(15x^4 + 30x^2y^2 - 40x^2z^2 + 15y^4 - 40y^2z^2 + 8z^4\right)}{8}$
28	$-\frac{\sqrt{70}x(x^2-3y^2)(x^2+y^2-8z^2)}{16}$
29	$\frac{3\sqrt{14}x\left(x^4 - 10x^2y^2 + 5y^4\right)}{16}$
30	$-\frac{3\sqrt{14}y\left(5x^4-10x^2y^2+y^4\right)}{16}$
31	$\frac{\sqrt{15}x\left(x^{4}+2x^{2}y^{2}-12x^{2}z^{2}+y^{4}-12y^{2}z^{2}+8z^{4}\right)}{8}$
32	$\frac{\sqrt{15}y\left(x^4 + 2x^2y^2 - 12x^2z^2 + y^4 - 12y^2z^2 + 8z^4\right)}{8}$
33	$\frac{3\sqrt{35}z(x^2-2xy-y^2)(x^2+2xy-y^2)}{8}$
34	$\frac{3\sqrt{35}xyz(x-y)(x+y)}{2}$
35	$-\frac{\sqrt{105}z(x-y)(x+y)(x^2+y^2-2z^2)}{4}$
36	$\frac{\sqrt{105}xyz\left(x^2+y^2-2z^2\right)}{2}$

No.	expression
37	$-\frac{5x^6}{16} - \frac{15x^4y^2}{16} + \frac{45x^4z^2}{8} - \frac{15x^2y^4}{16} + \frac{45x^2y^2z^2}{4} - \frac{15x^2z^4}{2} - \frac{5y^6}{16} + \frac{45y^4z^2}{8} - \frac{15y^2z^4}{2} + z^6$
38	$\frac{\sqrt{462}(x-y)(x+y)(x^2-4xy+y^2)(x^2+4xy+y^2)}{32}$
39	$-\frac{\sqrt{210}xz(x^2-3y^2)(3x^2+3y^2-8z^2)}{16}$
40	$\frac{\sqrt{462}xy(x^2-3y^2)(3x^2-y^2)}{16}$
41	$-\frac{\sqrt{210}yz(3x^2-y^2)(3x^2+3y^2-8z^2)}{16}$
42	$-\frac{3\sqrt{154}yz\left(5x^4-10x^2y^2+y^4\right)}{16}$
43	$-\frac{3\sqrt{154}xz(x^4-10x^2y^2+5y^4)}{16}$
44	$\frac{\sqrt{21}yz\left(5x^4+10x^2y^2-20x^2z^2+5y^4-20y^2z^2+8z^4\right)}{8}$
45	$-\frac{\sqrt{21}xz\left(5x^4+10x^2y^2-20x^2z^2+5y^4-20y^2z^2+8z^4\right)}{8}$
46	$-\frac{3\sqrt{7}xy(x-y)(x+y)(x^2+y^2-10z^2)}{4}$
47	$\frac{3\sqrt{7}(x^2+y^2-10z^2)(x^2-2xy-y^2)(x^2+2xy-y^2)}{16}$
48	$-\frac{\sqrt{210}xy\left(x^4+2x^2y^2-16x^2z^2+y^4-16y^2z^2+16z^4\right)}{2x^2+2x^2+2x^2+2x^2+2x^2+2x^2+2x^2+2x^2$
49	$-\frac{\sqrt{210}(x-y)(x+y)\left(x^4+2x^2y^2-16x^2z^2+y^4-16y^2z^2+16z^4\right)}{32}$

表 8 rank 7

No.	expression
50	$\frac{\sqrt{6006}xyz(x^2-3y^2)(3x^2-y^2)}{16}$
51	$\frac{\sqrt{21}y(3x^2-y^2)(3x^4+6x^2y^2-60x^2z^2+3y^4-60y^2z^2+80z^4)}{32}$
52	$-\frac{z \left(35 x^6+105 x^4 y^2-210 x^4 z^2+105 x^2 y^4-420 x^2 y^2 z^2+168 x^2 z^4+35 y^6-210 y^4 z^2+168 y^2 z^4-16 z^6\right)}{2 x^2 + 2 x^2$
53	$\frac{\sqrt{6006}z(x-y)(x+y)(x^2-4xy+y^2)(x^2+4xy+y^2)}{32}$
	$\frac{32}{\sqrt{21}x(x^2-3y^2)(3x^4+6x^2y^2-60x^2z^2+3y^4-60y^2z^2+80z^4)}{32}$
54	$\frac{32}{\sqrt{429}x(x^6 - 21x^4y^2 + 35x^2y^4 - 7y^6)}$
55	
56	$\frac{\sqrt{429}y(7x^6 - 35x^4y^2 + 21x^2y^4 - y^6)}{32}$
57	$-\frac{\sqrt{231}x(x^2+y^2-12z^2)(x^4-10x^2y^2+5y^4)}{32}$
58	$\frac{\sqrt{231}y(x^2+y^2-12z^2)(5x^4-10x^2y^2+y^4)}{32}$
59	$-\frac{\sqrt{7}x \left(5 x^6+15 x^4 y^2-120 x^4 z^2+15 x^2 y^4-240 x^2 y^2 z^2+240 x^2 z^4+5 y^6-120 y^4 z^2+240 y^2 z^4-64 z^6\right)}{32}$
60	$-\frac{\sqrt{7}y \left(5 x^6+15 x^4 y^2-120 x^4 z^2+15 x^2 y^4-240 x^2 y^2 z^2+240 x^2 z^4+5 y^6-120 y^4 z^2+240 y^2 z^4-64 z^6\right)}{32}$
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	$\frac{4}{\sqrt{42}z(x-y)(x+y)\left(15x^4+30x^2y^2-80x^2z^2+15y^4-80y^2z^2+48z^4\right)}$
64	$-\frac{\sqrt{42}xyz\left(15x^4+30x^2y^2-80x^2z^2+15y^4-80y^2z^2+48z^4\right)}{2}$
	16

表 9 rank 8

No.	expression
65	$\frac{35x^8}{128} + \frac{35x^6y^2}{32} - \frac{35x^6z^2}{4} + \frac{105x^4y^4}{64} - \frac{105x^4y^2z^2}{4} + \frac{105x^4z^4}{4} + \frac{35x^2y^6}{32} - \frac{105x^2y^4z^2}{4} + \frac{105x^2y^2z^4}{2} - 14x^2z^6 + \frac{35y^8}{128} - \frac{35y^6z^2}{4} + \frac{105y^4z^4}{4} - 14y^2z^6 + z^8 - \frac{105x^4y^4}{4} - \frac{105x^4y^4}{4} + \frac{105x^4y^4}{4} - \frac{105x^4y^4}{4$
66	$-\frac{\sqrt{858}(x-y)(x+y)\left(x^2+y^2-14z^2\right)\left(x^2-4xy+y^2\right)\left(x^2+4xy+y^2\right)}{64}$
67	$\frac{\sqrt{1155}xz(x^2-3y^2)(3x^4+6x^2y^2-20x^2z^2+3y^4-20y^2z^2+16z^4)}{32}$
68	$-\frac{\sqrt{858}xy(x^2-3y^2)(3x^2-y^2)(x^2+y^2-14z^2)}{32}$
69	$\frac{\sqrt{1155}yz(3x^2-y^2)(3x^4+6x^2y^2-20x^2z^2+3y^4-20y^2z^2+16z^4)}{32}$
70	$\frac{3\sqrt{715}yz\left(7x^6 - 35x^4y^2 + 21x^2y^4 - y^6\right)}{22}$
71	$-\frac{3\sqrt{715}xz\left(x^6-21x^4y^2+35x^2y^4-7y^6\right)}{32}$
72	$\frac{3\sqrt{1001}yz(x^2+y^2-4z^2)(5x^4-10x^2y^2+y^4)}{32}$
73	$\frac{3\sqrt{1001}xz(x^2+y^2-4z^2)(x^4-10x^2y^2+5y^4)}{22}$
74	$-\frac{3yz \left(35x^6 + 105x^4y^2 - 280x^4z^2 + 105x^2y^4 - 560x^2y^2z^2 + 336x^2z^4 + 35y^6 - 280y^4z^2 + 336y^2z^4 - 64z^6\right)}{32}$
75	$\frac{3xz\left(35x^{6} + 105x^{4}y^{2} - 280x^{4}z^{2} + 105x^{2}y^{4} - 560x^{2}y^{2}z^{2} + 336x^{2}z^{4} + 35y^{6} - 280y^{4}z^{2} + 336y^{2}z^{4} - 64z^{6}\right)}{32z^{2}}$
76	$-\frac{3\sqrt{715}xy(x-y)(x+y)\left(x^2-2xy-y^2\right)\left(x^2+2xy-y^2\right)}{16}$
77	$-\frac{3\sqrt{715}(x^4 - 4x^3y - 6x^2y^2 + 4xy^3 + y^4)(x^4 + 4x^3y - 6x^2y^2 - 4xy^3 + y^4)}{128}$
78	$\frac{3\sqrt{77}xy(x-y)(x+y)\left(x^4+2x^2y^2-24x^2z^2+y^4-24y^2z^2+40z^4\right)}{16}$
79	$-\frac{3\sqrt{77}\left(x^2-2xy-y^2\right)\left(x^2+2xy-y^2\right)\left(x^4+2x^2y^2-24x^2z^2+y^4-24y^2z^2+40z^4\right)}{64}$
80	$\frac{3\sqrt{70}xy\left(x^{6} + 3x^{4}y^{2} - 30x^{4}z^{2} + 3x^{2}y^{4} - 60x^{2}y^{2}z^{2} + 80x^{2}z^{4} + y^{6} - 30y^{4}z^{2} + 80y^{2}z^{4} - 32z^{6}\right)}{3^{2}}$
81	$\frac{3\sqrt{70}(x-y)(x+y)\left(x^{6}+3x^{4}y^{2}-30x^{4}z^{2}+3x^{2}y^{4}-60x^{2}y^{2}z^{2}+80x^{2}z^{4}+y^{6}-30y^{4}z^{2}+80y^{2}z^{4}-32z^{6}\right)}{64}$

表 10 rank 9

```
expression
No.
              \sqrt{4290}xyz(x^2-3y^2)(3x^2-y^2)(3x^2+3y^2-14z^2)
 82
            \sqrt{24310}y(3x^2-y^2)(3x^6-27x^4y^2+33x^2y^4-y^6)
 83
              \sqrt{2310}y \left(3 x^2-y^2\right) \left(x^6+3 x^4 y^2-36 x^4 z^2+3 x^2 y^4-72 x^2 y^2 z^2+120 x^2 z^4+y^6-36 y^4 z^2+120 y^2 z^4-64 z^6\right)
 84
            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)
               \sqrt{4290}z(x-y)(x+y)\Big(x^2-4xy+y^2\Big)\Big(x^2+4xy+y^2\Big)\Big(3x^2+3y^2-14z^2\Big)
 86
             \sqrt{24310}x(x^2-3y^2)(x^6-33x^4y^2+27x^2y^4-3y^6)
 87
              \sqrt{2310}x \left(x^2 - 3y^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)
              3\sqrt{1430}x\left(x^2+y^2-16z^2\right)\left(x^6-21x^4y^2+35x^2y^4-7y^6\right)
 89
              3\sqrt{1430}y(x^2+y^2-16z^2)(7x^6-35x^4y^2+21x^2y^4-y^6)
           3\sqrt{286}x\left(x^4-10x^2y^2+5y^4\right)\left(x^4+2x^2y^2-28x^2z^2+y^4-28y^2z^2+56z^4\right)
 91
                                                       128
              3\sqrt{286}y\left(5x^{4}-10x^{2}y^{2}+y^{4}\right)\left(x^{4}+2x^{2}y^{2}-28x^{2}z^{2}+y^{4}-28y^{2}z^{2}+56z^{4}\right)
 92
           3\sqrt{5}x\left(7x^{8} + 28x^{6}y^{2} - 280x^{6}z^{2} + 42x^{4}y^{4} - 840x^{4}y^{2}z^{2} + 1120x^{4}z^{4} + 28x^{2}y^{6} - 840x^{2}y^{4}z^{2} + 2240x^{2}y^{2}z^{4} - 896x^{2}z^{6} + 7y^{8} - 280y^{6}z^{2} + 1120y^{4}z^{4} - 896y^{2}z^{6} + 128z^{8}\right)
 93
           3\sqrt{5}y(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)
 94
           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)
 95
              -\frac{3\sqrt{12155}xyz(x-y)(x+y)(x^2-2xy-y^2)(x^2+2xy-y^2)}{16}
           \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
           \frac{3\sqrt{5005}xyz(x-y)(x+y)\left(x^{4}+2x^{2}y^{2}-8x^{2}z^{2}+y^{4}-8y^{2}z^{2}+8z^{4}\right)}{16}
              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)
           3\sqrt{110}xyz\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)
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^6y^4}{32} - \frac{525x^6z^4}{8} - \frac{315x^4y^6}{128} + \frac{4725x^4y^4z^2}{64} - \frac{1575x^4y^2z^4}{8} + \frac{315x^2z^6}{4} - \frac{315x^2y^8}{256} + \frac{1575x^2y^6z^2}{32} - \frac{1575x^2y^4z^4}{8} + \frac{315x^2y^2z^6}{2} - \frac{1575x^2y^4z^4}{2} - \frac{1575x^2y^4z^4}{
                       \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)
                       \frac{\sqrt{461890}xz(x^2-3y^2)(x^6-33x^4y^2+27x^2y^4-3y^6)}{256}
 103
                      -\frac{\sqrt{4290}xz\big(x^2-3y^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}\frac{128}{\sqrt{4290}xy\big(x^2-3y^2\big)\big(3x^2-y^2\big)\big(3x^4+6x^2y^2-96x^2z^2+3y^4-96y^2z^2+224z^4\big)}}{256}
 104
 105
                        \sqrt{461890}yz(3x^2-y^2)(3x^6-27x^4y^2+33x^2y^4-y^6)
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}yz\left(3x^2+3y^2-16z^2\right)\left(7x^6-35x^4y^2+21x^2y^4-y^6\right)}{256}
 108
                       \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} \\ - \frac{\sqrt{858}yz\big(5x^4 - 10x^2y^2 + y^4\big)\big(15x^4 + 30x^2y^2 - 140x^2z^2 + 15y^4 - 140y^2z^2 + 168z^4\big)}{128} 
110
                             \frac{\sqrt{858}xz\left(x^{4}-10x^{2}y^{2}+5y^{4}\right)\left(15x^{4}+30x^{2}y^{2}-140x^{2}z^{2}+15y^{4}-140y^{2}z^{2}+168z^{4}\right)}{128}
 111
                        \sqrt{55}yz \left(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}\right)
112
                             \frac{\sqrt{55}xz\left(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}\right)}{128}
113
                        \sqrt{92378}xy(x^4-10x^2y^2+5y^4)(5x^4-10x^2y^2+y^4)
 114
                      -\frac{\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}
\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}
115
 116
                       \frac{\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)}{256}
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}-1112z^{6}\right)}{32}
118
                       \frac{\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)}{128}
  119
                             \frac{\sqrt{165}xy \left(7 x^8+28 x^6 y^2-336 x^6 z^2+42 x^4 y^4-1008 x^4 y^2 z^2+1680 x^4 z^4+28 x^2 y^6-1008 x^2 y^4 z^2+3360 x^2 y^2 z^4-1792 x^2 z^6+7 y^8-336 y^6 z^2+1680 y^4 z^4-1792 y^2 z^6+384 z^8\right)}{128}
 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
```

```
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
                                \frac{\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)}{512}
123
                          \sqrt{30030}y \left(3x^2 - y^2\right) \underline{\left(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\right)}
124
                                125
                         \frac{\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)}{512}
126
                                \frac{\sqrt{46189}x\left(x^2-3y^2\right)\left(x^2+y^2-20z^2\right)\left(x^6-33x^4y^2+27x^2y^4-3y^6\right)}{512}
127
                           \sqrt{30030}x \left(x^2 - 3y^2\right) \left(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\right) + 512x^2 + 36x^2y^4z^2 + 672x^2y^2z^4 - 448x^2z^6 + y^8 - 56y^6z^2 + 336y^4z^4 - 448y^2z^6 + 128z^8\right) + 512x^2 + 36x^2y^4z^2 + 672x^2y^2z^4 - 448x^2z^6 + y^8 - 56y^6z^2 + 336y^4z^4 - 448y^2z^6 + 128z^8\right) + 512x^2 + 36x^2y^4z^2 + 36x^2y^2z^2 + 36x^2y^4z^2 + 36x^2y^2z^2 + 36x^2y^4z^2 + 36x^2y^2 + 36x^2y^4z^2 + 36x^2y^4z^2 + 36x^2y^4z^2 + 36x^2y^4z^2 + 36x^2y^4z^2 + 36x^2y^2z^2 + 3
128
                            \sqrt{88179}x\left(x^{10} - 55x^8y^2 + 330x^6y^4 - 462x^4y^6 + 165x^2y^8 - 11y^{10}\right)
129
                                \sqrt{88179}y \left(11x^{10} - 165x^8y^2 + 462x^6y^4 - 330x^4y^6 + 55x^2y^8 - y^{10}\right)
130
                                                                                                                       512
                           \sqrt{36465}x \left(x^{6} - 21x^{4}y^{2} + 35x^{2}y^{4} - 7y^{6}\right) \left(x^{4} + 2x^{2}y^{2} - 36x^{2}z^{2} + y^{4} - 36y^{2}z^{2} + 96z^{4}\right)
131
                            \sqrt{36465}y\left(7x^6 - 35x^4y^2 + 21x^2y^4 - y^6\right)\left(x^4 + 2x^2y^2 - 36x^2z^2 + y^4 - 36y^2z^2 + 96z^4\right)
132
                                                                                                                                         512
                               \frac{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)}{512}
133
                         \frac{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)}{2}
134
                                \sqrt{66}x \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) + 25x^2y^2 + 25x^2y^2
135
                                \sqrt{66}y(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}y^2z^4 - 13440x^4z^6 + 105x^2y^8 - 5040x^2y^2z^2 + 105x^2y^8 - 105x^2y^8 
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\left(x^{4}-10x^{2}y^{2}+5y^{4}\right)\left(5x^{4}-10x^{2}y^{2}+y^{4}\right)
138
                                \frac{\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)}{256}
139
                           \frac{\sqrt{692835}xyz(x-y)(x+y)\left(x^2+y^2-6z^2\right)\left(x^2-2xy-y^2\right)\left(x^2+2xy-y^2\right)}{32}
140
                               \frac{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)}{128}
141
                                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)
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
```