

No. 6     $D_2$     222    [ orthorhombic ] (axial)

表 1   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	$\frac{\sqrt{3}(X-Y)(X+Y)}{2}$
7	$\sqrt{3}XY$
8	$\sqrt{3}XZ$
9	$\sqrt{3}YZ$

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

表 5 rank 4

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

表 6 rank 5

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

表 7 rank 6

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

表 8 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	$-\frac{\sqrt{231}XYZ(X-Y)(X+Y)(3X^2 + 3Y^2 - 10Z^2)}{4}$
52	$-\frac{\sqrt{77}XYZ(3X^4 - 20X^2Y^2 + 10X^2Z^2 + 3Y^4 + 10Y^2Z^2 - 6Z^4)}{4}$
53	$-\frac{Z(35X^6 + 105X^4Y^2 - 210X^4Z^2 + 105X^2Y^4 - 420X^2Y^2Z^2 + 168X^2Z^4 + 35Y^6 - 210Y^4Z^2 + 168Y^2Z^4 - 16Z^6)}{16}$
54	$-\frac{\sqrt{231}Z(X^2 - 2XY - Y^2)(X^2 + 2XY - Y^2)(3X^2 + 3Y^2 - 10Z^2)}{16}$
55	$\frac{\sqrt{6006}Z(X-Y)(X+Y)(X^2 - 4XY + Y^2)(X^2 + 4XY + Y^2)}{32}$
56	$\frac{\sqrt{42}Z(X-Y)(X+Y)(15X^4 + 30X^2Y^2 - 80X^2Z^2 + 15Y^4 - 80Y^2Z^2 + 48Z^4)}{32}$
57	$-\frac{Y(35X^6 - 210X^4Y^2 + 105X^4Z^2 + 168X^2Y^4 - 420X^2Y^2Z^2 + 105X^2Z^4 - 16Y^6 + 168Y^4Z^2 - 210Y^2Z^4 + 35Z^6)}{16}$
58	$-\frac{\sqrt{231}Y(X^2 - 2XZ - Z^2)(X^2 + 2XZ - Z^2)(3X^2 - 10Y^2 + 3Z^2)}{16}$
59	$-\frac{\sqrt{6006}Y(X-Z)(X+Z)(X^2 - 4XZ + Z^2)(X^2 + 4XZ + Z^2)}{32}$
60	$-\frac{\sqrt{42}Y(X-Z)(X+Z)(15X^4 - 80X^2Y^2 + 30X^2Z^2 + 48Y^4 - 80Y^2Z^2 + 15Z^4)}{32}$
61	$\frac{X(16X^6 - 168X^4Y^2 - 168X^4Z^2 + 210X^2Y^4 + 420X^2Y^2Z^2 + 210X^2Z^4 - 35Y^6 - 105Y^4Z^2 - 105Y^2Z^4 - 35Z^6)}{16}$
62	$\frac{\sqrt{231}X(10X^2 - 3Y^2 - 3Z^2)(Y^2 - 2YZ - Z^2)(Y^2 + 2YZ - Z^2)}{16}$
63	$\frac{\sqrt{6006}X(Y-Z)(Y+Z)(Y^2 - 4YZ + Z^2)(Y^2 + 4YZ + Z^2)}{32}$
64	$\frac{\sqrt{42}X(Y-Z)(Y+Z)(48X^4 - 80X^2Y^2 - 80X^2Z^2 + 15Y^4 + 30Y^2Z^2 + 15Z^4)}{32}$

表 9 rank 8

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

表 10 rank 9

No.	expression
82	$\frac{\sqrt{510510}XYZ(X-Y)(X+Y)(X-Z)(X+Z)(Y-Z)(Y+Z)}{8}$
83	$\frac{\sqrt{330}XYZ(6X^6-21X^4Y^2-21X^4Z^2-21X^2Y^4+140X^2Y^2Z^2-21X^2Z^4+6Y^6-21Y^4Z^2-21Y^2Z^4+6Z^6)}{8}$
84	$\frac{\sqrt{4290}XYZ(X-Y)(X+Y)(3X^4-11X^2Y^2-7X^2Z^2+3Y^4-7Y^2Z^2+7Z^4)}{8}$
85	$\frac{3\sqrt{1430}XYZ(X^6-7X^4Z^2+7X^2Z^4+Y^6-7Y^4Z^2+7Y^2Z^4-2Z^6)}{8}$
86	$\frac{Z(315X^8+1260X^6Y^2-3360X^6Z^2+1890X^4Y^4-10080X^4Y^2Z^2+6048X^4Z^4+1260X^2Y^6-10080X^2Y^4Z^2+12096X^2Y^2Z^4-2304X^2Z^6+315Y^8-3360Y^6Z^2+6048Y^4Z^4-2304Y^2Z^6+128Z^8)}{128}$
87	$\frac{3\sqrt{12155}Z(X^4-4X^3Y-6X^2Y^2+4XY^3+Y^4)(X^4+4X^3Y-6X^2Y^2-4XY^3+Y^4)}{128}$
88	$\frac{3\sqrt{5005}Z(X^2-2XY-Y^2)(X^2+2XY-Y^2)(X^4+2X^2Y^2-8X^2Z^2+Y^4-8Y^2Z^2+8Z^4)}{64}$
89	$-\frac{\sqrt{4290}Z(X-Y)(X+Y)(X^2-4XY+Y^2)(X^2+4XY+Y^2)(3X^2+3Y^2-14Z^2)}{64}$
90	$-\frac{3\sqrt{110}Z(X-Y)(X+Y)(7X^6+21X^4Y^2-70X^4Z^2+21X^2Y^4-140X^2Y^2Z^2+112X^2Z^4+7Y^6-70Y^4Z^2+112Y^2Z^4-32Z^6)}{64}$
91	$\frac{Y(315X^8-3360X^6Y^2+1260X^6Z^2+6048X^4Y^4-10080X^4Y^2Z^2+1890X^4Z^4-2304X^2Y^6+12096X^2Y^4Z^2-10080X^2Y^2Z^4+1260X^2Z^6+128Y^8-2304Y^6Z^2+6048Y^4Z^4-3360Y^2Z^6+315Z^8)}{128}$
92	$\frac{3\sqrt{12155}Y(X^4-4X^3Z-6X^2Z^2+4XZ^3+Z^4)(X^4+4X^3Z-6X^2Z^2-4XZ^3+Z^4)}{128}$
93	$\frac{3\sqrt{5005}Y(X^2-2XZ-Z^2)(X^2+2XZ-Z^2)(X^4-8X^2Y^2+2X^2Z^2+8Y^4-8Y^2Z^2+Z^4)}{64}$
94	$\frac{\sqrt{4290}Y(X-Z)(X+Z)(X^2-4XZ+Z^2)(X^2+4XZ+Z^2)(3X^2-14Y^2+3Z^2)}{64}$
95	$\frac{3\sqrt{110}Y(X-Z)(X+Z)(7X^6-70X^4Y^2+21X^4Z^2+112X^2Y^4-140X^2Y^2Z^2+21X^2Z^4-32Y^6+112Y^4Z^2-70Y^2Z^4+7Z^6)}{64}$
96	$\frac{X(128X^8-2304X^6Y^2-2304X^6Z^2+6048X^4Y^4+12096X^4Y^2Z^2+6048X^4Z^4-3360X^2Y^6-10080X^2Y^4Z^2-10080X^2Y^2Z^4-3360X^2Z^6+315Y^8+1260Y^6Z^2+1890Y^4Z^4+1260Y^2Z^6+315Z^8)}{128}$
97	$\frac{3\sqrt{12155}X(Y^4-4Y^3Z-6Y^2Z^2+4YZ^3+Z^4)(Y^4+4Y^3Z-6Y^2Z^2-4YZ^3+Z^4)}{128}$
98	$\frac{3\sqrt{5005}X(Y^2-2YZ-Z^2)(Y^2+2YZ-Z^2)(8X^4-8X^2Y^2-8X^2Z^2+Y^4+2Y^2Z^2+Z^4)}{64}$
99	$\frac{\sqrt{4290}X(Y-Z)(Y+Z)(14X^2-3Y^2-3Z^2)(Y^2-4YZ+Z^2)(Y^2+4YZ+Z^2)}{64}$
100	$\frac{3\sqrt{110}X(Y-Z)(Y+Z)(32X^6-112X^4Y^2-112X^4Z^2+70X^2Y^4+140X^2Y^2Z^2+70X^2Z^4-7Y^6-21Y^4Z^2-21Y^2Z^4-7Z^6)}{64}$

表 11 rank 10

No.	expression
101	$\frac{\sqrt{390} \left( 2X^{10} - 45X^8Y^2 - 45X^8Z^2 + 42X^6Y^4 + 1008X^6Y^2Z^2 + 42X^6Z^4 + 42X^4Y^6 - 1260X^4Y^4Z^2 - 1260X^4Y^2Z^4 + 42X^4Z^6 - 45X^2Y^8 + 1008X^2Y^6Z^2 - 1260X^2Y^4Z^4 + 1008X^2Y^2Z^6 - 45X^2Z^8 + 2Y^{10} - 45Y^8Z^2 + 42Y^6Z^4 + 42Y^4Z^6 - 45Y^2Z^8 + 2Z^{10} \right)}{96}$
102	$\frac{\sqrt{27170} (X-Y)(X+Y)(X-Z)(X+Z)(Y-Z)(Y+Z) \left( 3X^4 - 11X^2Y^2 - 11X^2Z^2 + 3Y^4 - 11Y^2Z^2 + 3Z^4 \right)}{32}$
103	$-\frac{\sqrt{420189} \left( 22X^{10} + 45X^8Y^2 - 1035X^8Z^2 - 105X^6Y^4 - 630X^6Y^2Z^2 + 4935X^6Z^4 - 105X^4Y^6 + 3150X^4Y^4Z^2 - 1575X^4Y^2Z^4 - 4830X^4Z^6 + 45X^2Y^8 - 630X^2Y^6Z^2 - 1575X^2Y^4Z^4 + 1260X^2Y^2Z^6 + 990X^2Z^8 + 22Y^{10} - 1035Y^8Z^2 + 4935Y^6Z^4 - 4830Y^4Z^6 + 990Y^2Z^8 - 44Z^{10} \right)}{35952}$
104	$\frac{\sqrt{140063} (X-Y)(X+Y) \left( 22X^8 - 653X^6Y^2 - 315X^6Z^2 + 2602X^4Y^4 - 945X^4Y^2Z^2 + 1575X^4Z^4 - 653X^2Y^6 - 945X^2Y^4Z^2 + 3150X^2Y^2Z^4 - 1680X^2Z^6 + 22Y^8 - 315Y^6Z^2 + 1575Y^4Z^4 - 1680Y^2Z^6 + 360Z^8 \right)}{11984}$
105	$-\frac{\sqrt{3213210} \left( 3X^{10} - 96X^8Y^2 - 39X^8Z^2 + 224X^6Y^4 + 1344X^6Y^2Z^2 - 42X^6Z^4 + 224X^4Y^6 - 6720X^4Y^4Z^2 + 3360X^4Y^2Z^4 - 182X^4Z^6 - 96X^2Y^8 + 1344X^2Y^6Z^2 + 3360X^2Y^4Z^4 - 2688X^2Y^2Z^6 + 135X^2Z^8 + 3Y^{10} - 39Y^8Z^2 - 42Y^6Z^4 - 182Y^4Z^6 + 135Y^2Z^8 - 6Z^{10} \right)}{23968}$
106	$\frac{\sqrt{1071070} (X-Y)(X+Y) \left( 9X^8 - 165X^6Y^2 - 231X^6Z^2 - 25X^4Y^4 + 3801X^4Y^2Z^2 + 406X^4Z^4 - 165X^2Y^6 + 3801X^2Y^4Z^2 - 9674X^2Y^2Z^4 + 266X^2Z^6 + 9Y^8 - 231Y^6Z^2 + 406Y^4Z^4 + 266Y^2Z^6 - 57Z^8 \right)}{23968}$
107	$-\frac{\sqrt{12155} XY(X-Y)(X+Y) \left( X^2 + Y^2 - 18Z^2 \right) \left( X^2 - 2XY - Y^2 \right) \left( X^2 + 2XY - Y^2 \right)}{32}$
108	$-\frac{\sqrt{2145} XY(X-Y)(X+Y) \left( X^6 + 3X^4Y^2 - 42X^4Z^2 + 3X^2Y^4 - 84X^2Y^2Z^2 + 168X^2Z^4 + Y^6 - 42Y^4Z^2 + 168Y^2Z^4 - 112Z^6 \right)}{32}$
109	$\frac{\sqrt{92378} XY \left( X^4 - 10X^2Y^2 + 5Y^4 \right) \left( 5X^4 - 10X^2Y^2 + Y^4 \right)}{256}$
110	$\frac{\sqrt{4290} XY \left( X^2 - 3Y^2 \right) \left( 3X^2 - Y^2 \right) \left( 3X^4 + 6X^2Y^2 - 96X^2Z^2 + 3Y^4 - 96Y^2Z^2 + 224Z^4 \right)}{256}$
111	$\frac{\sqrt{165} XY \left( 7X^8 + 28X^6Y^2 - 336X^6Z^2 + 42X^4Y^4 - 1008X^4Y^2Z^2 + 1680X^4Z^4 + 28X^2Y^6 - 1008X^2Y^4Z^2 + 3360X^2Y^2Z^4 - 1792X^2Z^6 + 7Y^8 - 336Y^6Z^2 + 1680Y^4Z^4 - 1792Y^2Z^6 + 384Z^8 \right)}{128}$
112	$\frac{\sqrt{12155} XZ(X-Z)(X+Z) \left( X^2 - 18Y^2 + Z^2 \right) \left( X^2 - 2XZ - Z^2 \right) \left( X^2 + 2XZ - Z^2 \right)}{32}$
113	$\frac{\sqrt{2145} XZ(X-Z)(X+Z) \left( X^6 - 42X^4Y^2 + 3X^4Z^2 + 168X^2Y^4 - 84X^2Y^2Z^2 + 3X^2Z^4 - 112Y^6 + 168Y^4Z^2 - 42Y^2Z^4 + Z^6 \right)}{32}$
114	$\frac{\sqrt{92378} XZ \left( X^4 - 10X^2Z^2 + 5Z^4 \right) \left( 5X^4 - 10X^2Z^2 + Z^4 \right)}{256}$
115	$\frac{\sqrt{4290} XZ \left( X^2 - 3Z^2 \right) \left( 3X^2 - Z^2 \right) \left( 3X^4 - 96X^2Y^2 + 6X^2Z^2 + 224Y^4 - 96Y^2Z^2 + 3Z^4 \right)}{256}$
116	$\frac{\sqrt{165} XZ \left( 7X^8 - 336X^6Y^2 + 28X^6Z^2 + 1680X^4Y^4 - 1008X^4Y^2Z^2 + 42X^4Z^4 - 1792X^2Y^6 + 3360X^2Y^4Z^2 - 1008X^2Y^2Z^4 + 28X^2Z^6 + 384Y^8 - 1792Y^6Z^2 + 1680Y^4Z^4 - 336Y^2Z^6 + 7Z^8 \right)}{128}$
117	$\frac{\sqrt{12155} YZ(Y-Z)(Y+Z) \left( 18X^2 - Y^2 - Z^2 \right) \left( Y^2 - 2YZ - Z^2 \right) \left( Y^2 + 2YZ - Z^2 \right)}{32}$
118	$\frac{\sqrt{2145} YZ(Y-Z)(Y+Z) \left( 112X^6 - 168X^4Y^2 - 168X^4Z^2 + 42X^2Y^4 + 84X^2Y^2Z^2 + 42X^2Z^4 - Y^6 - 3Y^4Z^2 - 3Y^2Z^4 - Z^6 \right)}{32}$
119	$\frac{\sqrt{92378} YZ \left( Y^4 - 10Y^2Z^2 + 5Z^4 \right) \left( 5Y^4 - 10Y^2Z^2 + Z^4 \right)}{256}$
120	$\frac{\sqrt{4290} YZ \left( Y^2 - 3Z^2 \right) \left( 3Y^2 - Z^2 \right) \left( 224X^4 - 96X^2Y^2 - 96X^2Z^2 + 3Y^4 + 6Y^2Z^2 + 3Z^4 \right)}{256}$
121	$\frac{\sqrt{165} YZ \left( 384X^8 - 1792X^6Y^2 - 1792X^6Z^2 + 1680X^4Y^4 + 3360X^4Y^2Z^2 + 1680X^4Z^4 - 336X^2Y^6 - 1008X^2Y^4Z^2 - 1008X^2Y^2Z^4 - 336X^2Z^6 + 7Y^8 + 28Y^6Z^2 + 42Y^4Z^4 + 28Y^2Z^6 + 7Z^8 \right)}{128}$

表 12 rank 11

No.	expression
122	$\frac{\sqrt{2431XYZ(5X^8-30X^6Y^2-30X^6Z^2+63X^4Y^4+63X^4Z^4-30X^2Y^6-30X^2Z^6+5Y^8-30Y^6Z^2+63Y^4Z^4-30Y^2Z^6+5Z^8)}}{8}$
123	$-\frac{\sqrt{692835XYZ(X-Y)(X+Y)(X^2+Y^2-6Z^2)(X^2-2XY-Y^2)(X^2+2XY-Y^2)}}{32}$
124	$-\frac{\sqrt{230945XYZ(X^8-6X^6Y^2-6X^6Z^2+42X^4Y^2Z^2-6X^2Y^6+42X^2Y^4Z^2-84X^2Y^2Z^4+12X^2Z^6+Y^8-6Y^6Z^2+12Y^2Z^6-2Z^8)}}{32}$
125	$-\frac{3\sqrt{1001XYZ(X-Y)(X+Y)(5X^6+15X^4Y^2-70X^4Z^2+15X^2Y^4-140X^2Y^2Z^2+168X^2Z^4+5Y^6-70Y^4Z^2+168Y^2Z^4-80Z^6)}}{32}$
126	$-\frac{\sqrt{3003XYZ(5X^8-150X^6Y^2+90X^6Z^2+336X^4Y^4-70X^4Y^2Z^2-168X^4Z^4-150X^2Y^6-70X^2Y^4Z^2+140X^2Y^2Z^4+60X^2Z^6+5Y^8+90Y^6Z^2-168Y^4Z^4+60Y^2Z^6-10Z^8)}}{32}$
127	$-\frac{Z(693X^{10}+3465X^8Y^2-11550X^8Z^2+6930X^6Y^4-46200X^6Y^2Z^2+36960X^6Z^4+6930X^4Y^6-69300X^4Y^4Z^2+110880X^4Y^2Z^4-31680X^4Z^6+3465X^2Y^8-46200X^2Y^6Z^2+110880X^2Y^4Z^4-63360X^2Y^2Z^6+7040X^2Z^8+693Y^{10}-11550Y^8Z^2+36960Y^6Z^4-31680Y^4Z^6+7040Y^2Z^8-256Z^{10})}{256}$
128	$-\frac{\sqrt{692835Z(X^2+Y^2-6Z^2)(X^4-4X^3Y-6X^2Y^2+4XY^3+Y^4)(X^4+4X^3Y-6X^2Y^2-4XY^3+Y^4)}}{256}$
129	$-\frac{3\sqrt{1001Z(X^2-2XY-Y^2)(X^2+2XY-Y^2)(5X^6+15X^4Y^2-70X^4Z^2+15X^2Y^4-140X^2Y^2Z^2+168X^2Z^4+5Y^6-70Y^4Z^2+168Y^2Z^4-80Z^6)}}{128}$
130	$\frac{\sqrt{1939938Z(X-Y)(X+Y)(X^4-4X^3Y-14X^2Y^2-4XY^3+Y^4)(X^4+4X^3Y-14X^2Y^2+4XY^3+Y^4)}}{512}$
131	$-\frac{\sqrt{14586Z(X-Y)(X+Y)(X^2-4XY+Y^2)(X^2+4XY+Y^2)(15X^4+30X^2Y^2-160X^2Z^2+15Y^4-160Y^2Z^2+224Z^4)}}{512}$
132	$-\frac{\sqrt{2145Z(X-Y)(X+Y)(21X^8+84X^6Y^2-336X^6Z^2+126X^4Y^4-1008X^4Y^2Z^2+1008X^4Z^4+84X^2Y^6-1008X^2Y^4Z^2+2016X^2Y^2Z^4-768X^2Z^6+21Y^8-336Y^6Z^2+1008Y^4Z^4-768Y^2Z^6+128Z^8)}}{256}$
133	$-\frac{Y(693X^{10}-11550X^8Y^2+3465X^8Z^2+36960X^6Y^4-46200X^6Y^2Z^2+6930X^6Z^4-31680X^4Y^6+110880X^4Y^4Z^2-69300X^4Y^2Z^4+6930X^4Z^6+7040X^2Y^8-63360X^2Y^6Z^2+110880X^2Y^4Z^4-46200X^2Y^2Z^6+3465X^2Z^8-256Y^{10}+7040Y^8Z^2-31680Y^6Z^4+36960Y^4Z^6-11550Y^2Z^8+693Z^{10})}{256}$
134	$-\frac{\sqrt{692835Y(X^2-6Y^2+Z^2)(X^4-4X^3Z-6X^2Z^2+4XZ^3+Z^4)(X^4+4X^3Z-6X^2Z^2-4XZ^3+Z^4)}}{256}$
135	$-\frac{3\sqrt{1001Y(X^2-2XZ-Z^2)(X^2+2XZ-Z^2)(5X^6-70X^4Y^2+15X^4Z^2+168X^2Y^4-140X^2Y^2Z^2+15X^2Z^4-80Y^6+168Y^4Z^2-70Y^2Z^4+5Z^6)}}{128}$
136	$-\frac{\sqrt{1939938Y(X-Z)(X+Z)(X^4-4X^3Z-14X^2Z^2-4XZ^3+Z^4)(X^4+4X^3Z-14X^2Z^2+4XZ^3+Z^4)}}{512}$
137	$-\frac{\sqrt{14586Y(X-Z)(X+Z)(X^2-4XZ+Z^2)(X^2+4XZ+Z^2)(15X^4-160X^2Y^2+30X^2Z^2+224Y^4-160Y^2Z^2+15Z^4)}}{512}$
138	$-\frac{\sqrt{2145Y(X-Z)(X+Z)(21X^8-336X^6Y^2+84X^6Z^2+1008X^4Y^4-1008X^4Y^2Z^2+126X^4Z^4-768X^2Y^6+2016X^2Y^4Z^2-1008X^2Y^2Z^4+84X^2Z^6+128Y^8-768Y^6Z^2+1008Y^4Z^4-336Y^2Z^6+21Z^8)}}{256}$
139	$-\frac{X(256X^{10}-7040X^8Y^2-7040X^8Z^2+31680X^6Y^4+63360X^6Y^2Z^2+31680X^6Z^4-36960X^4Y^6-110880X^4Y^4Z^2-110880X^4Y^2Z^4-36960X^4Z^6+11550X^2Y^8+46200X^2Y^6Z^2+69300X^2Y^4Z^4+46200X^2Y^2Z^6+11550X^2Z^8-693Y^{10}-3465Y^8Z^2-6930Y^6Z^4-6930Y^4Z^6-3465Y^2Z^8-693Z^{10})}{256}$
140	$-\frac{\sqrt{692835X(6X^2-Y^2-Z^2)(Y^4-4Y^3Z-6Y^2Z^2+4YZ^3+Z^4)(Y^4+4Y^3Z-6Y^2Z^2-4YZ^3+Z^4)}}{256}$
141	$-\frac{3\sqrt{1001X(Y^2-2YZ-Z^2)(Y^2+2YZ-Z^2)(80X^6-168X^4Y^2-168X^4Z^2+70X^2Y^4+140X^2Y^2Z^2+70X^2Z^4-5Y^6-15Y^4Z^2-15Y^2Z^4-5Z^6)}}{128}$
142	$-\frac{\sqrt{1939938X(Y-Z)(Y+Z)(Y^4-4Y^3Z-14Y^2Z^2-4YZ^3+Z^4)(Y^4+4Y^3Z-14Y^2Z^2+4YZ^3+Z^4)}}{512}$
143	$-\frac{\sqrt{14586X(Y-Z)(Y+Z)(Y^2-4YZ+Z^2)(Y^2+4YZ+Z^2)(224X^4-160X^2Y^2-160X^2Z^2+15Y^4+30Y^2Z^2+15Z^4)}}{512}$
144	$-\frac{\sqrt{2145X(Y-Z)(Y+Z)(128X^8-768X^6Y^2-768X^6Z^2+1008X^4Y^4+2016X^4Y^2Z^2+1008X^4Z^4-336X^2Y^6-1008X^2Y^4Z^2-1008X^2Y^2Z^4-336X^2Z^6+21Y^8+84Y^6Z^2+126Y^4Z^4+84Y^2Z^6+21Z^8)}}{256}$