BLT-sets of Q(4, 41)

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There are 10 BLT-sets.

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The BLT-Sets

3.1 Isomorphism Type 0

Stabilizer has order 5785920
Plane intersection type is 42
Plane invariant is

$$\left[\ 42\ \right]$$

$\rightarrow$	1_1
42_0	1

$\downarrow$	1_1
42_0	42

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41\}_{42}$
$C_1 = \{0\}_1$

$\rightarrow$	1_1
42_0	1

$\downarrow$	1_1
42_0	42

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41\}_{42}$
$C_1 = \{0\}_1$
Column cell 1:
Order of the group that is induced on the object is 68880
Number of ancestors on 5-sets is 41.
Number of orbits on 5-sets is 18.
With 1 orbits on the object
Orbit lengths: 42
The points by ranks:

i	Rank
0	0
1	1
2	244
3	245
4	246
5	271
6	279
7	274
8	250
9	248
10	262

i	Rank
11	275
12	280
13	264
14	247
15	268
16	270
17	272
18	273
19	254
20	256
21	265

i	Rank
22	266
23	267
24	269
25	249
26	251
27	252
28	253
29	255
30	276
31	277
32	257

i	Rank
33	278
34	258
35	259
36	260
37	281
38	261
39	282
40	283
41	263

The points:

$$P_0 = (0, 1, 0, 0, 0)P_1 = (0, 0, 1, 0, 0)P_2 = (0, 1, 27, 40, 27)P_3 = (0, 1, 17, 20, 34)$$
$$P_4 = (0, 1, 3, 27, 9)P_5 = (0, 1, 30, 19, 20)P_6 = (0, 1, 6, 33, 11)P_7 = (0, 1, 22, 37, 26)$$
$$P_8 = (0, 1, 29, 35, 39)P_9 = (0, 1, 6, 8, 30)P_{10} = (0, 1, 12, 28, 23)P_{11} = (0, 1, 14, 32, 38)$$
$$P_{12} = (0, 1, 35, 31, 24)P_{13} = (0, 1, 26, 39, 13)P_{14} = (0, 1, 35, 10, 17)P_{15} = (0, 1, 15, 18, 6)$$
$$P_{16} = (0, 1, 38, 3, 1)P_{17} = (0, 1, 13, 24, 8)P_{18} = (0, 1, 7, 15, 5)P_{19} = (0, 1, 7, 26, 36)$$
$$P_{20} = (0, 1, 30, 22, 21)P_{21} = (0, 1, 12, 13, 18)P_{22} = (0, 1, 24, 16, 19)P_{23} = (0, 1, 34, 29, 37)$$
$$P_{24} = (0, 1, 28, 11, 31)P_{25} = (0, 1, 11, 34, 25)P_{26} = (0, 1, 19, 5, 29)P_{27} = (0, 1, 14, 9, 3)$$
$$P_{28} = (0, 1, 22, 4, 15)P_{29} = (0, 1, 13, 17, 33)P_{30} = (0, 1, 19, 36, 12)P_{31} = (0, 1, 29, 6, 2)$$
$$P_{32} = (0, 1, 38, 38, 40)P_{33} = (0, 1, 11, 7, 16)P_{34} = (0, 1, 28, 30, 10)P_{35} = (0, 1, 15, 23, 35)$$
$$P_{36} = (0, 1, 34, 12, 4)P_{37} = (0, 1, 3, 14, 32)P_{38} = (0, 1, 24, 25, 22)P_{39} = (0, 1, 17, 21, 7)$$
$$P_{40} = (0, 1, 27, 1, 14)P_{41} = (0, 1, 26, 2, 28)$$

Stabilizer of order 5785920 is generated by:

$$g_1 = \begin{bmatrix} 31 & 0 & 0 & 0 & 0 \\ 0 & 10 & 0 & 0 & 0 \\ 0 & 0 & 10 & 0 & 0 \\ 0 & 0 & 0 & 10 & 0 \\ 0 & 0 & 0 & 0 & 10 \end{bmatrix}$$

with 1764 fixed points

$$g_2 = \begin{bmatrix} 37 & 0 & 0 & 0 & 0 \\ 0 & 33 & 0 & 0 & 0 \\ 0 & 0 & 39 & 0 & 0 \\ 0 & 0 & 0 & 37 & 0 \\ 0 & 0 & 0 & 0 & 37 \end{bmatrix}$$

with 44 fixed points

$$g_3 = \begin{bmatrix} 38 & 0 & 0 & 0 & 0 \\ 0 & 39 & 0 & 0 & 0 \\ 0 & 0 & 16 & 0 & 0 \\ 0 & 0 & 0 & 38 & 0 \\ 0 & 0 & 0 & 0 & 38 \end{bmatrix}$$

with 44 fixed points

$$g_4 = \begin{bmatrix} 18 & 0 & 0 & 40 & 14 \\ 0 & 33 & 0 & 0 & 0 \\ 0 & 0 & 33 & 0 & 0 \\ 7 & 0 & 0 & 28 & 29 \\ 20 & 0 & 0 & 15 & 28 \end{bmatrix}$$

with 1682 fixed points

$$g_5 = \begin{bmatrix} 25 & 0 & 0 & 39 & 28 \\ 0 & 6 & 0 & 0 & 0 \\ 0 & 2 & 6 & 13 & 18 \\ 14 & 18 & 0 & 5 & 10 \\ 40 & 13 & 0 & 8 & 5 \end{bmatrix}$$

with 42 fixed points

$$g_6 = \begin{bmatrix} 18 & 0 & 0 & 24 & 33 \\ 0 & 0 & 21 & 0 & 0 \\ 0 & 18 & 0 & 0 & 0 \\ 37 & 0 & 0 & 10 & 23 \\ 12 & 0 & 0 & 2 & 10 \end{bmatrix}$$

with 44 fixed points

$$g_7 = \begin{bmatrix} 11 & 0 & 0 & 40 & 14 \\ 0 & 5 & 12 & 36 & 12 \\ 0 & 22 & 5 & 30 & 10 \\ 7 & 10 & 12 & 28 & 13 \\ 20 & 30 & 36 & 35 & 28 \end{bmatrix}$$

with 42 fixed points

3.2 Isomorphism Type 1

Stabilizer has order 3528
Plane intersection type is $21^2\ 3^{8820}$
Plane invariant is

$$\begin{bmatrix} 21 & 0 \\ 0 & 21 \end{bmatrix}$$

$\rightarrow$	2_1
42_0	1

$\downarrow$	2_1
42_0	21

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41\}_{42}$
$C_1 = \{0, 1\}_2$

$\rightarrow$	2_1
42_0	1

$\downarrow$	2_1
42_0	21

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41\}_{42}$
$C_1 = \{0, 1\}_2$
Column cell 1:
Order of the group that is induced on the object is 3528
Number of ancestors on 5-sets is 1042.
Number of orbits on 5-sets is 1042.
With 1 orbits on the object
Orbit lengths: 42
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	11	275	22	21176	33	49305
1	1	12	280	23	39896	34	45789
2	244	13	264	24	15007	35	9601
3	245	14	247	25	59829	36	35635
4	246	15	268	26	23409	37	69754
5	271	16	270	27	23775	38	16605
6	279	17	272	28	57165	39	35287
7	274	18	273	29	46809	40	62775
8	250	19	254	30	54355	41	24273
9	248	20	256	31	49233		
10	262	21	40801	32	18274		

The points:

$$P_0 = (0, 1, 0, 0, 0)P_1 = (0, 0, 1, 0, 0)P_2 = (0, 1, 27, 40, 27)P_3 = (0, 1, 17, 20, 34)$$

$$P_4 = (0, 1, 3, 27, 9)P_5 = (0, 1, 30, 19, 20)P_6 = (0, 1, 6, 33, 11)P_7 = (0, 1, 22, 37, 26)$$

$$P_8 = (0, 1, 29, 35, 39)P_9 = (0, 1, 6, 8, 30)P_{10} = (0, 1, 12, 28, 23)P_{11} = (0, 1, 14, 32, 38)$$

$$P_{12} = (0, 1, 35, 31, 24)P_{13} = (0, 1, 26, 39, 13)P_{14} = (0, 1, 35, 10, 17)P_{15} = (0, 1, 15, 18, 6)$$

$$P_{16} = (0, 1, 38, 3, 1)P_{17} = (0, 1, 13, 24, 8)P_{18} = (0, 1, 7, 15, 5)P_{19} = (0, 1, 7, 26, 36)$$

$$P_{20} = (0, 1, 30, 22, 21)P_{21} = (1, 21, 27, 3, 2)P_{22} = (1, 33, 19, 6, 32)P_{23} = (1, 33, 19, 14, 2)$$

$$P_{24} = (1, 15, 31, 7, 33)P_{25} = (1, 37, 30, 28, 35)P_{26} = (1, 10, 7, 28, 37)P_{27} = (1, 5, 24, 20, 37)$$

$$P_{28} = (1, 30, 21, 21, 9)P_{29} = (1, 10, 7, 29, 23)P_{30} = (1, 7, 9, 7, 26)P_{31} = (1, 2, 26, 4, 38)$$

$$P_{32} = (1, 35, 4, 38, 6)P_{33} = (1, 40, 28, 32, 38)P_{34} = (1, 37, 30, 23, 23)P_{35} = (1, 21, 27, 6, 1)$$

$$P_{36} = (1, 7, 9, 37, 16)P_{37} = (1, 35, 4, 18, 40)P_{38} = (1, 30, 21, 27, 7)P_{39} = (1, 15, 31, 17, 16)$$

$$P_{40} = (1, 5, 24, 29, 34)P_{41} = (1, 2, 26, 32, 15)$$

Stabilizer of order 3528 is generated by:

$$g_1 = \begin{bmatrix} 39 & 0 & 0 & 38 & 1 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 21 & 0 & 0 & 22 & 34 \\ 19 & 0 & 0 & 19 & 22 \end{bmatrix}$$

with 1682 fixed points

$$g_2 = \begin{bmatrix} 5 & 0 & 0 & 8 & 11 \\ 0 & 20 & 0 & 0 & 0 \\ 0 & 0 & 20 & 0 & 0 \\ 15 & 0 & 0 & 33 & 23 \\ 37 & 0 & 0 & 2 & 33 \end{bmatrix}$$

with 42 fixed points

$$g_3 = \begin{bmatrix} 32 & 0 & 0 & 4 & 26 \\ 0 & 12 & 0 & 0 & 0 \\ 0 & 36 & 12 & 4 & 15 \\ 28 & 15 & 0 & 10 & 20 \\ 39 & 4 & 0 & 16 & 10 \end{bmatrix}$$

with 2 fixed points

$$g_4 = \begin{bmatrix} 32 & 0 & 0 & 4 & 26 \\ 0 & 24 & 39 & 29 & 37 \\ 0 & 10 & 24 & 31 & 24 \\ 28 & 24 & 37 & 39 & 16 \\ 39 & 31 & 29 & 21 & 39 \end{bmatrix}$$

with 2 fixed points

$$g_5 = \begin{bmatrix} 32 & 0 & 0 & 3 & 40 \\ 0 & 31 & 17 & 10 & 17 \\ 0 & 28 & 25 & 27 & 9 \\ 21 & 36 & 35 & 30 & 13 \\ 19 & 26 & 23 & 35 & 30 \end{bmatrix}$$

with 0 fixed points

$$g_6 = \begin{bmatrix} 0 & 8 & 25 & 40 & 27 \\ 2 & 1 & 13 & 6 & 4 \\ 31 & 19 & 1 & 30 & 22 \\ 39 & 9 & 32 & 24 & 22 \\ 35 & 28 & 4 & 10 & 18 \end{bmatrix}$$

with 0 fixed points

3.3 Isomorphism Type 2

Stabilizer has order 2
Plane intersection type is $5^6\ 4^{258}\ 3^{10388}$
Plane invariant is

$$\begin{bmatrix} 5 & 1 & 0 & 1 & 0 & 1 \\ 1 & 5 & 0 & 1 & 0 & 1 \\ 0 & 0 & 5 & 1 & 1 & 1 \\ 1 & 1 & 1 & 5 & 1 & 2 \\ 0 & 0 & 1 & 1 & 5 & 1 \\ 1 & 1 & 1 & 2 & 1 & 5 \end{bmatrix}$$

$\rightarrow$	2_1	2_5	2_6
2_0	2	1	0
4_3	1	0	1
2_9	0	1	1
2_2	1	0	0
6_7	0	1	0
4_8	0	0	1
22_4	0	0	0

$\downarrow$	2_1	2_5	2_6
2_0	2	1	0
4_3	2	0	2
2_9	0	1	1
2_2	1	0	0
6_7	0	3	0
4_8	0	0	2
22_4	0	0	0

$C_0 = \{28, 40\}_2$
$C_1 = \{3, 5\}_2$
$C_2 = \{15, 34\}_2$
$C_3 = \{3, 4, 10, 36\}_4$

$C_4 = \{5, 9, 11, 12, 13, 14, 16, 17, 19, 20, 22, 23, 24, 25, 26, 29, 30, 31, 32, 33, 37, 41\}_{22}$
$C_5 = \{0, 2\}_2$
$C_6 = \{1, 4\}_2$
$C_7 = \{6, 7, 21, 27, 38, 39\}_6$
$C_8 = \{0, 1, 8, 35\}_4$
$C_9 = \{2, 18\}_2$

$\rightarrow$	2_1	2_{16}	2_{17}	2_2	2_{19}	2_{21}	2_{153}	2_{23}	2_{22}	2_{24}	2_{20}	2_{26}	2_{25}	2_{29}	2_{28}	2_{30}	2_{31}	2_{27}	2_{32}	2_{34}	2_{33}	2_{35}	2_{154}	2_{36}	2
2_0	2	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2_4	1	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2_{146}	0	1	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2_5	1	0	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
2_3	0	1	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	
2_9	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0	0	0	0	
2_{149}	0	0	1	0	0	1	1	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	
2_8	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
2_7	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	1	0	0	
2_{148}	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	
2_6	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
2_{147}	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
2_{11}	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
2_{12}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
2_{13}	0	0	0	1	0	0	0	0	0	1	0	1	0	1	1	0	0	0	0	0	0	0	1	0	
2_{151}	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	1	0	1	0	0	
2_{152}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	
2_{10}	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
2_{150}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	
2_{15}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
2_{14}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	

$\downarrow$	2_1	2_{16}	2_{17}	2_2	2_{19}	2_{21}	2_{153}	2_{23}	2_{22}	2_{24}	2_{20}	2_{26}	2_{25}	2_{29}	2_{28}	2_{30}	2_{31}	2_{27}	2_{32}	2_{34}	2_{33}	2_{35}	2_{154}	2_{36}	2
2_0	2	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2_4	1	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2_{146}	0	1	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2_5	1	0	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
2_3	0	1	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	
2_9	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0	0	0	0	
2_{149}	0	0	1	0	0	1	1	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	
2_8	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
2_7	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	1	0	0	
2_{148}	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	
2_6	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
2_{147}	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
2_{11}	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
2_{12}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
2_{13}	0	0	0	1	0	0	0	0	0	1	0	1	0	1	1	0	0	0	0	0	0	0	1	0	
2_{151}	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	1	0	1	0	0	
2_{152}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	
2_{10}	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
2_{150}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	
2_{15}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
2_{14}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	

$C_0 = \{28, 40\}_2$
$C_1 = \{208, 221\}_2$
$C_2 = \{104, 247\}_2$
$C_3 = \{6, 27\}_2$
$C_4 = \{3, 36\}_2$
$C_5 = \{4, 10\}_2$
$C_6 = \{9, 14\}_2$

$C_{7} = \{21, 38\}_{2}$
$C_{8} = \{0, 35\}_{2}$
$C_{9} = \{15, 34\}_{2}$
$C_{10} = \{12, 29\}_{2}$
$C_{11} = \{5, 17\}_{2}$
$C_{12} = \{22, 26\}_{2}$
$C_{13} = \{13, 19\}_{2}$
$C_{14} = \{30, 31\}_{2}$
$C_{15} = \{25, 33\}_{2}$
$C_{16} = \{100, 261\}_{2}$
$C_{17} = \{61, 262\}_{2}$
$C_{18} = \{47, 60\}_{2}$
$C_{19} = \{16, 62\}_{2}$
$C_{20} = \{93, 227\}_{2}$
$C_{21} = \{141, 153\}_{2}$
$C_{22} = \{126, 167\}_{2}$
$C_{23} = \{226, 238\}_{2}$
$C_{24} = \{2, 18\}_{2}$
$C_{25} = \{95, 222\}_{2}$
$C_{26} = \{197, 229\}_{2}$
$C_{27} = \{15, 219\}_{2}$
$C_{28} = \{180, 182\}_{2}$
$C_{29} = \{99, 125\}_{2}$
$C_{30} = \{138, 201\}_{2}$
$C_{31} = \{146, 187\}_{2}$
$C_{32} = \{87, 105\}_{2}$
$C_{33} = \{3, 102\}_{2}$
$C_{34} = \{135, 186\}_{2}$
$C_{35} = \{19, 147\}_{2}$
$C_{36} = \{89, 213\}_{2}$
$C_{37} = \{92, 254\}_{2}$
$C_{38} = \{124, 249\}_{2}$
$C_{39} = \{88, 173\}_{2}$
$C_{40} = \{192, 211\}_{2}$
$C_{41} = \{23, 250\}_{2}$
$C_{42} = \{67, 179\}_{2}$
$C_{43} = \{170, 218\}_{2}$
$C_{44} = \{51, 113\}_{2}$
$C_{45} = \{85, 90\}_{2}$
$C_{46} = \{77, 183\}_{2}$
$C_{47} = \{13, 152\}_{2}$
$C_{48} = \{96, 240\}_{2}$
$C_{49} = \{178, 248\}_{2}$
$C_{50} = \{58\}_{1}$
$C_{51} = \{195, 241\}_{2}$
$C_{52} = \{185, 233\}_{2}$
$C_{53} = \{155, 209\}_{2}$
$C_{54} = \{50, 196\}_{2}$
$C_{55} = \{150, 259\}_{2}$
$C_{56} = \{5, 235\}_{2}$
$C_{57} = \{55, 123\}_{2}$
$C_{58} = \{33, 110\}_{2}$
$C_{59} = \{20, 117\}_{2}$
$C_{60} = \{107, 159\}_{2}$
$C_{61} = \{115, 258\}_{2}$
$C_{62} = \{10, 65\}_{2}$
$C_{63} = \{223, 251\}_{2}$
$C_{64} = \{130, 133\}_{2}$
$C_{65} = \{129, 214\}_{2}$

$C_{66} = \{48, 263\}_2$
$C_{67} = \{59, 176\}_2$
$C_{68} = \{76, 151\}_2$
$C_{69} = \{29, 168\}_2$
$C_{70} = \{37, 148\}_2$
$C_{71} = \{52, 188\}_2$
$C_{72} = \{27, 169\}_2$
$C_{73} = \{28, 204\}_2$
$C_{74} = \{11, 91\}_2$
$C_{75} = \{94, 131\}_2$
$C_{76} = \{163, 181\}_2$
$C_{77} = \{156, 228\}_2$
$C_{78} = \{245\}_1$
$C_{79} = \{32, 57\}_2$
$C_{80} = \{12, 80\}_2$
$C_{81} = \{38, 231\}_2$
$C_{82} = \{119, 190\}_2$
$C_{83} = \{63, 134\}_2$
$C_{84} = \{22, 206\}_2$
$C_{85} = \{108, 220\}_2$
$C_{86} = \{7, 194\}_2$
$C_{87} = \{24, 252\}_2$
$C_{88} = \{101, 224\}_2$
$C_{89} = \{160, 184\}_2$
$C_{90} = \{43, 98\}_2$
$C_{91} = \{39, 122\}_2$
$C_{92} = \{84, 202\}_2$
$C_{93} = \{164, 234\}_2$
$C_{94} = \{191, 239\}_2$
$C_{95} = \{64, 243\}_2$
$C_{96} = \{127, 255\}_2$
$C_{97} = \{41, 116\}_2$
$C_{98} = \{40, 78\}_2$
$C_{99} = \{79, 143\}_2$
$C_{100} = \{70, 82\}_2$
$C_{101} = \{21, 53\}_2$
$C_{102} = \{144, 162\}_2$
$C_{103} = \{56, 253\}_2$
$C_{104} = \{74, 232\}_2$
$C_{105} = \{149, 236\}_2$
$C_{106} = \{118, 120\}_2$
$C_{107} = \{165, 189\}_2$
$C_{108} = \{49, 203\}_2$
$C_{109} = \{242\}_1$
$C_{110} = \{44, 161\}_2$
$C_{111} = \{111, 145\}_2$
$C_{112} = \{34, 71\}_2$
$C_{113} = \{69, 177\}_2$
$C_{114} = \{103, 246\}_2$
$C_{115} = \{72, 142\}_2$
$C_{116} = \{42, 109\}_2$
$C_{117} = \{66, 256\}_2$
$C_{118} = \{35, 86\}_2$
$C_{119} = \{45, 75\}_2$
$C_{120} = \{46, 207\}_2$
$C_{121} = \{54, 244\}_2$
$C_{122} = \{26, 157\}_2$
$C_{123} = \{106, 198\}_2$
$C_{124} = \{114, 217\}_2$

$C_{125} = \{199, 225\}_2$
$C_{126} = \{30, 215\}_2$
$C_{127} = \{128, 172\}_2$
$C_{128} = \{31\}_1$
$C_{129} = \{132, 260\}_2$
$C_{130} = \{36, 257\}_2$
$C_{131} = \{83, 230\}_2$
$C_{132} = \{137, 140\}_2$
$C_{133} = \{174, 212\}_2$
$C_{134} = \{4, 17\}_2$
$C_{135} = \{112, 216\}_2$
$C_{136} = \{0, 25\}_2$
$C_{137} = \{139\}_1$
$C_{138} = \{8, 210\}_2$
$C_{139} = \{200\}_1$
$C_{140} = \{73, 175\}_2$
$C_{141} = \{14, 193\}_2$
$C_{142} = \{1, 171\}_2$
$C_{143} = \{9, 166\}_2$
$C_{144} = \{81, 121\}_2$
$C_{145} = \{97, 205\}_2$
$C_{146} = \{2, 18\}_2$
$C_{147} = \{16, 32\}_2$
$C_{148} = \{7, 39\}_2$
$C_{149} = \{1, 8\}_2$
$C_{150} = \{20, 37\}_2$
$C_{151} = \{24, 41\}_2$
$C_{152} = \{11, 23\}_2$
$C_{153} = \{154, 158\}_2$
$C_{154} = \{136, 237\}_2$
$C_{155} = \{6, 68\}_2$
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Order of the group that is induced on the object is 2
Number of ancestors on 5-sets is 425334.
Number of orbits on 5-sets is 425334.
With 21 orbits on the object
Orbit lengths: 2^{21}
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	11	35866	22	57790	33	33672
1	1	12	821	23	55776	34	16493
2	244	13	60176	24	67989	35	12852
3	245	14	48606	25	66693	36	10555
4	248	15	35229	26	31019	37	49823
5	1097	16	38807	27	63317	38	19096
6	48375	17	47009	28	12499	39	39990
7	20094	18	50769	29	69013	40	57022
8	15614	19	20303	30	48591	41	53751
9	40832	20	50903	31	33929		
10	34567	21	32994	32	20826		

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,27,40,27)P_3 = (0,1,17,20,34)$$

$$P_4 = (0,1,6,8,30)P_5 = (0,1,15,38,5)P_6 = (1,20,24,40,30)P_7 = (1,18,15,5,36)$$

$$P_8 = (1,32,15,14,33)P_9 = (1,31,17,23,2)P_{10} = (1,17,31,3,29)P_{11} = (1,29,25,11,16)$$

$$P_{12} = (0,1,38,25,28)P_{13} = (1,33,19,9,35)P_{14} = (1,23,14,7,30)P_{15} = (1,25,30,12,16)$$

$$P_{16} = (1,14,31,33,39)P_{17} = (1,40,7,27,23)P_{18} = (1,25,7,33,22)P_{19} = (1,6,39,6,36)$$

$$P_{20} = (1,34,39,31,22)P_{21} = (1,29,4,14,18)P_{22} = (1,31,38,33,9)P_{23} = (1,1,19,36,4)$$

$$P_{24} = (1,25,30,26,20)P_{25} = (1,26,37,19,27)P_{26} = (1,15,18,35,11)P_{27} = (1,39,35,24,8)$$

$$P_{28} = (1,13,18,33,14)P_{29} = (1,11,37,37,20)P_{30} = (1,9,22,33,30)P_{31} = (1,32,7,29,29)$$

$$P_{32} = (1,28,25,5,32)P_{33} = (1,20,17,25,29)P_{34} = (1,38,37,4,7)P_{35} = (1,14,32,6,14)$$

$$P_{36} = (1,34,9,1,21)P_{37} = (1,28,39,9,38)P_{38} = (1,2,19,14,6)P_{39} = (1,9,38,13,2)$$

$$P_{40} = (1,4,13,26,9)P_{41} = (1,32,22,6,26)$$

Stabilizer of order 2 is generated by:

$$g_1 = \begin{bmatrix} 34 & 34 & 13 & 29 & 10 \\ 27 & 9 & 3 & 39 & 9 \\ 17 & 11 & 9 & 33 & 28 \\ 5 & 28 & 9 & 27 & 11 \\ 35 & 33 & 39 & 33 & 27 \end{bmatrix}$$

with 42 fixed points

3.4 Isomorphism Type 3

Stabilizer has order 3
Plane intersection type is $5^9\ 4^{210}\ 3^{10550}$
Plane invariant is

$$\begin{bmatrix} 5 & 1 & 0 & 0 & 0 & 1 & 0 & 1 & 0 \\ 1 & 5 & 1 & 1 & 0 & 0 & 1 & 0 & 1 \\ 0 & 1 & 5 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 5 & 0 & 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 5 & 1 & 0 & 1 & 0 \\ 1 & 0 & 0 & 1 & 1 & 5 & 1 & 0 & 1 \\ 0 & 1 & 0 & 0 & 0 & 1 & 5 & 1 & 0 \\ 1 & 0 & 1 & 1 & 1 & 0 & 1 & 5 & 0 \\ 0 & 1 & 0 & 0 & 0 & 1 & 0 & 0 & 5 \end{bmatrix}$$

$\rightarrow$	3_1	3_4	3_5
9_0	1	1	0
6_6	1	0	1
6_2	0	1	0
9_7	0	0	1
12_3	0	0	0

$\downarrow$	3_1	3_4	3_5
9_0	3	3	0
6_6	2	0	2
6_2	0	2	0
9_7	0	0	3
12_3	0	0	0

$C_0 = \{7, 12, 19, 21, 26, 28, 34, 36, 39\}_9$
$C_1 = \{1, 5, 7\}_3$
$C_2 = \{8, 9, 10, 17, 37, 38\}_6$
$C_3 = \{5, 13, 14, 15, 16, 20, 27, 29, 31, 32, 40, 41\}_{12}$
$C_4 = \{0, 3, 6\}_3$
$C_5 = \{2, 4, 8\}_3$
$C_6 = \{3, 4, 6, 18, 22, 30\}_6$
$C_7 = \{0, 1, 2, 11, 23, 24, 25, 33, 35\}_9$

$\rightarrow$	3_1	3_{13}	3_{14}	3_2	3_{16}	3_{18}	3_{17}	3_{20}	3_{19}	3_{21}	3_{22}	3_{15}	3_{24}	3_{26}	3_{28}	3_{29}	3_{27}	3_{30}	3_{31}	3_{33}	3_{34}	3_{32}	3_{25}	3_{35}	3_{36}
3_0	1	1	0	1	0	2	1	1	2	1	1	0	0	1	1	0	1	0	0	1	1	0	1	0	1
3_{83}	1	0	1	2	2	0	1	1	0	1	1	1	1	0	0	1	0	1	1	0	0	1	0	1	0
3_5	1	1	0	0	1	1	0	0	0	0	0	1	1	1	1	1	0	1	1	0	1	0	0	0	0
3_{84}	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	0
3_4	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
3_3	0	0	1	0	0	0	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	2	1
3_8	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	1	0	0	0	0	0	0	1
3_{10}	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0
3_9	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
3_7	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	1	0
3_6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
3_{11}	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
3_{85}	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
3_{12}	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0

$\downarrow$	3_1	3_{13}	3_{14}	3_2	3_{16}	3_{18}	3_{17}	3_{20}	3_{19}	3_{21}	3_{22}	3_{15}	3_{24}	3_{26}	3_{28}	3_{29}	3_{27}	3_{30}	3_{31}	3_{33}	3_{34}	3_{32}	3_{25}	3_{35}	3_{36}
3_0	1	1	0	1	0	2	1	1	2	1	1	0	0	1	1	0	1	0	0	1	1	0	1	0	1
3_{83}	1	0	1	2	2	0	1	1	0	1	1	1	1	0	0	1	0	1	1	0	0	1	0	1	0
3_5	1	1	0	0	1	1	0	0	0	0	0	1	1	1	1	1	0	1	1	0	1	0	0	0	0
3_{84}	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	0
3_4	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
3_3	0	0	1	0	0	0	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	2	1
3_8	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	1	0	0	0	0	0	0	1
3_{10}	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0
3_9	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
3_7	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	1	0
3_6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
3_{11}	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
3_{85}	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
3_{12}	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0

$C_0 = \{7, 12, 36\}_3$
$C_1 = \{5, 72, 120\}_3$
$C_2 = \{3, 62, 155\}_3$
$C_3 = \{0, 11, 25\}_3$
$C_4 = \{3, 22, 30\}_3$
$C_5 = \{26, 28, 34\}_3$
$C_6 = \{14, 15, 41\}_3$
$C_7 = \{2, 33, 35\}_3$
$C_8 = \{1, 23, 24\}_3$
$C_9 = \{9, 17, 38\}_3$
$C_{10} = \{8, 10, 37\}_3$
$C_{11} = \{5, 16, 27\}_3$
$C_{12} = \{20, 32, 40\}_3$

$C_{13} = \{0, 52, 168\}_3$
$C_{14} = \{136, 199, 218\}_3$
$C_{15} = \{49, 140, 164\}_3$
$C_{16} = \{27, 85, 188\}_3$
$C_{17} = \{8, 167, 204\}_3$
$C_{18} = \{1, 6, 31\}_3$
$C_{19} = \{36, 98, 109\}_3$
$C_{20} = \{19, 124, 142\}_3$
$C_{21} = \{37, 119, 176\}_3$
$C_{22} = \{105, 158, 165\}_3$
$C_{23} = \{15, 114, 172\}_3$
$C_{24} = \{38, 57, 214\}_3$
$C_{25} = \{2, 42, 104\}_3$
$C_{26} = \{4, 34, 181\}_3$
$C_{27} = \{12, 159, 215\}_3$
$C_{28} = \{39, 91, 146\}_3$
$C_{29} = \{179, 187, 208\}_3$
$C_{30} = \{84, 171, 189\}_3$
$C_{31} = \{7, 30, 126\}_3$
$C_{32} = \{16, 97, 212\}_3$
$C_{33} = \{10, 60, 200\}_3$
$C_{34} = \{67, 129, 152\}_3$
$C_{35} = \{22, 66, 166\}_3$
$C_{36} = \{41, 106, 112\}_3$
$C_{37} = \{9, 107, 147\}_3$
$C_{38} = \{76, 137, 207\}_3$
$C_{39} = \{11, 48, 89\}_3$
$C_{40} = \{61, 184, 213\}_3$
$C_{41} = \{47, 64, 88\}_3$
$C_{42} = \{43, 54, 108\}_3$
$C_{43} = \{79, 95, 118\}_3$
$C_{44} = \{74, 78, 195\}_3$
$C_{45} = \{13, 82, 210\}_3$
$C_{46} = \{59, 144, 209\}_3$
$C_{47} = \{35, 46, 128\}_3$
$C_{48} = \{177, 180, 194\}_3$
$C_{49} = \{14, 75, 117\}_3$
$C_{50} = \{69, 96, 102\}_3$
$C_{51} = \{83, 110, 115\}_3$
$C_{52} = \{56, 121, 178\}_3$
$C_{53} = \{28, 32, 201\}_3$
$C_{54} = \{58, 133, 185\}_3$
$C_{55} = \{139, 151, 197\}_3$
$C_{56} = \{40, 55, 169\}_3$
$C_{57} = \{21, 149, 193\}_3$
$C_{58} = \{113, 123, 196\}_3$
$C_{59} = \{17, 24, 51\}_3$
$C_{60} = \{63, 150, 160\}_3$
$C_{61} = \{141, 153, 216\}_3$
$C_{62} = \{80, 81, 100\}_3$
$C_{63} = \{65, 93, 138\}_3$
$C_{64} = \{145, 170, 217\}_3$
$C_{65} = \{92, 103, 156\}_3$
$C_{66} = \{45, 99, 186\}_3$
$C_{67} = \{20, 23, 174\}_3$
$C_{68} = \{70, 86, 191\}_3$
$C_{69} = \{50, 111, 131\}_3$
$C_{70} = \{94, 162, 211\}_3$
$C_{71} = \{68, 163, 190\}_3$

$C_{72} = \{44, 87, 134\}_3$
$C_{73} = \{161, 173, 202\}_3$
$C_{74} = \{90, 192, 205\}_3$
$C_{75} = \{18, 53, 132\}_3$
$C_{76} = \{130, 148, 157\}_3$
$C_{77} = \{77, 122, 183\}_3$
$C_{78} = \{71, 116, 135\}_3$
$C_{79} = \{101, 127, 206\}_3$
$C_{80} = \{182, 198, 203\}_3$
$C_{81} = \{26, 29, 143\}_3$
$C_{82} = \{25, 33, 73\}_3$
$C_{83} = \{4, 6, 18\}_3$
$C_{84} = \{19, 21, 39\}_3$
$C_{85} = \{13, 29, 31\}_3$
$C_{86} = \{125, 154, 175\}_3$
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Column cell 86:
Order of the group that is induced on the object is 3
Number of ancestors on 5-sets is 283556.
Number of orbits on 5-sets is 283556.
With 14 orbits on the object
Orbit lengths: 3^{14}
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	11	31020	22	43721	33	32087
1	1	12	47671	23	35816	34	43147
2	244	13	23436	24	34072	35	66455
3	245	14	17114	25	29254	36	54807
4	248	15	67965	26	9418	37	58574
5	10810	16	29046	27	59098	38	44983
6	27504	17	70268	28	42670	39	44693
7	43028	18	69360	29	69013	40	31888
8	27898	19	36755	30	17402	41	15227
9	63801	20	13966	31	19122		
10	67122	21	44705	32	46093		

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,27,40,27)P_3 = (0,1,17,20,34)$$

$$P_4 = (0,1,6,8,30)P_5 = (1,18,6,28,21)P_6 = (1,7,2,10,19)P_7 = (1,13,23,29,25)$$

$$P_8 = (1,32,11,3,19)P_9 = (1,10,27,2,8)P_{10} = (1,24,20,8,27)P_{11} = (1,39,29,35,11)$$

$$P_{12} = (1,21,22,16,30)P_{13} = (1,14,5,28,37)P_{14} = (1,17,4,37,7)P_{15} = (1,24,21,26,20)$$

$$P_{16} = (1,1,14,36,3)P_{17} = (1,12,23,31,40)P_{18} = (1,13,10,8,40)P_{19} = (1,24,9,18,13)$$

$$P_{20} = (1, 40, 14, 11, 31) P_{21} = (1, 2, 28, 26, 12) P_{22} = (1, 36, 27, 7, 25) P_{23} = (1, 23, 19, 29, 16)$$
$$P_{24} = (1, 23, 17, 19, 29) P_{25} = (1, 4, 15, 7, 3) P_{26} = (1, 40, 11, 10, 1) P_{27} = (1, 32, 11, 36, 5)$$
$$P_{28} = (1, 40, 38, 31, 25) P_{29} = (1, 11, 37, 37, 20) P_{30} = (1, 14, 20, 36, 7) P_{31} = (1, 6, 20, 14, 6)$$
$$P_{32} = (1, 28, 37, 28, 23) P_{33} = (1, 7, 31, 38, 18) P_{34} = (1, 32, 12, 1, 25) P_{35} = (1, 33, 24, 1, 27)$$
$$P_{36} = (1, 13, 31, 16, 26) P_{37} = (1, 39, 15, 14, 5) P_{38} = (1, 30, 39, 22, 12) P_{39} = (1, 27, 37, 26, 12)$$
$$P_{40} = (1, 35, 33, 36, 18) P_{41} = (1, 5, 12, 23, 33)$$

Stabilizer of order 3 is generated by:

$$g_1 = \begin{bmatrix} 29 & 40 & 26 & 25 & 1 \\ 35 & 12 & 31 & 36 & 16 \\ 20 & 9 & 11 & 6 & 33 \\ 11 & 6 & 39 & 3 & 32 \\ 23 & 11 & 9 & 16 & 12 \end{bmatrix}$$

with 0 fixed points

3.5 Isomorphism Type 4

Stabilizer has order 8
Plane intersection type is $6^2\ 5^{16}\ 4^{276}\ 3^{10176}$
Plane invariant is

$$\begin{bmatrix} 6 & 2 \\ 2 & 6 \end{bmatrix}$$

$\rightarrow$	2_1
2_0	2
8_2	1
32_3	0

$\downarrow$	2_1
2_0	2
8_2	4
32_3	0

$C_0 = \{0, 2\}_2$
$C_1 = \{0, 1\}_2$
$C_2 = \{1, 3, 4, 8, 9, 23, 29, 40\}_8$
$C_3 = \{5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 41\}_{32}$

$\rightarrow$	2_1	8_2	8_9	4_3	4_{11}	4_{12}	4_{13}	24_{10}	8_{14}	4_{15}	4_{17}	16_{18}	4_{19}	8_{16}	8_{21}	24_{24}	8_{23}	8_{22}	16_{25}	24_{27}	8_{28}	8_{26}	8_{20}	12_{30}
2_0	2	4	0	4	4	4	4	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8_4	1	0	1	0	0	0	0	3	4	1	1	4	1	1	1	3	1	1	2	3	1	1	0	0
8_5	0	2	2	1	0	0	0	3	0	1	0	0	0	2	1	3	1	0	0	0	0	0	2	3
8_6	0	2	0	0	1	0	0	0	0	0	1	2	0	0	1	3	0	2	2	3	1	0	2	0
8_7	0	0	1	0	0	1	0	3	0	0	0	0	1	1	1	0	1	1	4	3	0	3	0	3
8_8	0	0	1	0	0	0	1	0	0	0	0	2	0	0	0	3	1	0	0	3	2	0	0	0

$\downarrow$	2_1	8_2	8_9	4_3	4_{11}	4_{12}	4_{13}	24_{10}	8_{14}	4_{15}	4_{17}	16_{18}	4_{19}	8_{16}	8_{21}	24_{24}	8_{23}	8_{22}	16_{25}	24_{27}	8_{28}	8_{26}	8_{20}	12_{30}
2_0	2	1	0	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8_4	4	0	1	0	0	0	0	1	4	2	2	2	2	1	1	1	1	1	1	1	1	1	0	0
8_5	0	2	2	2	0	0	0	1	0	2	0	0	0	2	1	1	1	0	0	0	0	0	2	2
8_6	0	2	0	0	2	0	0	0	0	0	2	1	0	0	1	1	0	2	1	1	1	0	2	0
8_7	0	0	1	0	0	2	0	1	0	0	0	0	2	1	1	0	1	1	2	1	0	3	0	2
8_8	0	0	1	0	0	0	2	0	0	0	0	1	0	0	0	1	1	0	0	1	2	0	0	0

$C_0 = \{0, 2\}_2$
$C_1 = \{8, 291\}_2$
$C_2 = \{11, 77, 80, 81, 83, 94, 95, 162\}_8$
$C_3 = \{58, 69, 70, 280\}_4$
$C_4 = \{1, 3, 4, 8, 9, 23, 29, 40\}_8$
$C_5 = \{10, 11, 12, 16, 36, 38, 39, 41\}_8$
$C_6 = \{6, 7, 17, 18, 22, 30, 31, 35\}_8$
$C_7 = \{5, 13, 14, 15, 21, 25, 32, 37\}_8$

$C_{8} = \{19, 20, 24, 26, 27, 28, 33, 34\}_{8}$
$C_{9} = \{36, 133, 139, 151, 173, 215, 216, 263\}_{8}$
$C_{10} = \{0, 17, 18, 29, 35, 37, 44, 48, 91, 137, 146, 188, 200, 201, 203, 204, 220, 221, 222, 223, 224, 250, 285, 286\}_{24}$
$C_{11} = \{71, 84, 99, 226\}_{4}$
$C_{12} = \{47, 108, 239, 292\}_{4}$
$C_{13} = \{61, 93, 212, 244\}_{4}$
$C_{14} = \{27, 66, 105, 158, 183, 256, 257, 271\}_{8}$
$C_{15} = \{63, 120, 156, 242\}_{4}$
$C_{16} = \{30, 75, 121, 159, 161, 167, 185, 209\}_{8}$
$C_{17} = \{24, 73, 101, 266\}_{4}$
$C_{18} = \{33, 38, 67, 90, 117, 126, 147, 164, 168, 180, 181, 211, 251, 252, 254, 282\}_{16}$
$C_{19} = \{198, 236, 279, 293\}_{4}$
$C_{20} = \{2, 4, 74, 76, 82, 85, 136, 277\}_{8}$
$C_{21} = \{6, 25, 97, 110, 113, 207, 248, 253\}_{8}$
$C_{22} = \{3, 28, 51, 122, 123, 170, 178, 218\}_{8}$
$C_{23} = \{7, 40, 89, 127, 225, 228, 243, 245\}_{8}$
$C_{24} = \{16, 22, 23, 50, 65, 87, 102, 109, 115, 119, 125, 160, 166, 176, 184, 202, 240, 258, 264, 265, 268, 272, 275, 284\}_{24}$
$C_{25} = \{42, 53, 135, 141, 150, 152, 155, 189, 190, 194, 195, 231, 233, 235, 238, 259\}_{16}$
$C_{26} = \{13, 134, 142, 186, 192, 196, 230, 234\}_{8}$
$C_{27} = \{15, 20, 26, 32, 43, 46, 49, 68, 86, 129, 144, 171, 172, 175, 199, 206, 213, 217, 219, 249, 267, 276, 278, 288\}_{24}$
$C_{28} = \{21, 112, 114, 138, 140, 153, 270, 289\}_{8}$
$C_{29} = \{34, 52, 57, 59, 62, 64, 98, 103, 157, 174, 191, 193, 232, 237, 274, 281\}_{16}$
$C_{30} = \{12, 39, 45, 154, 163, 169, 205, 208, 246, 247, 260, 287\}_{12}$
$C_{31} = \{111, 128, 262, 283\}_{4}$
$C_{32} = \{72, 78, 100, 132, 148, 149, 197, 229\}_{8}$
$C_{33} = \{9, 41, 104, 107, 131, 177, 182, 214\}_{8}$
$C_{34} = \{31, 60, 88, 124, 165, 187, 210, 290\}_{8}$
$C_{35} = \{5, 10, 14, 54, 56, 79, 96, 130\}_{8}$
$C_{36} = \{116, 179, 241, 255\}_{4}$
$C_{37} = \{1, 106, 145, 269\}_{4}$
$C_{38} = \{19, 55, 92, 118, 143, 227, 261, 273\}_{8}$
Column cell 1:
Column cell 2:
Column cell 3:
Column cell 9:
Column cell 10:
Column cell 11:
Column cell 12:
Column cell 13:
Column cell 14:
Column cell 15:
Column cell 16:
Column cell 17:
Column cell 18:
Column cell 19:
Column cell 20:
Column cell 21:
Column cell 22:
Column cell 23:
Column cell 24:
Column cell 25:
Column cell 26:
Column cell 27:
Column cell 28:
Column cell 29:
Column cell 30:
Column cell 31:
Column cell 32:
Column cell 33:

Column cell 34:
Column cell 35:
Column cell 36:
Column cell 37:
Column cell 38:
Order of the group that is induced on the object is 8
Number of ancestors on 5-sets is 106386.
Number of orbits on 5-sets is 106386.
With 6 orbits on the object
Orbit lengths: $2,\ 8^5$
The points by ranks:

i	Rank
0	0
1	1
2	244
3	245
4	250
5	635
6	45767
7	61365
8	279
9	62768
10	22393

i	Rank
11	20546
12	65424
13	41645
14	49236
15	42171
16	59089
17	24914
18	40960
19	70475
20	22103
21	21779

i	Rank
22	47736
23	35934
24	8669
25	1294
26	18350
27	45217
28	46778
29	67113
30	15631
31	14602
32	23668

i	Rank
33	20664
34	51372
35	17093
36	21798
37	67162
38	53894
39	19103
40	56719
41	66621

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,27,40,27)P_3 = (0,1,17,20,34)$$

$$P_4 = (0,1,29,35,39)P_5 = (0,1,24,32,30)P_6 = (1,12,31,23,23)P_7 = (1,6,21,24,34)$$

$$P_8 = (0,1,6,33,11)P_9 = (1,26,33,29,34)P_{10} = (1,8,26,1,37)P_{11} = (1,26,25,40,36)$$

$$P_{12} = (1,13,2,26,10)P_{13} = (1,34,21,14,28)P_{14} = (1,35,5,4,38)P_{15} = (1,35,36,15,28)$$

$$P_{16} = (1,21,7,36,5)P_{17} = (1,17,4,20,15)P_{18} = (1,12,10,1,2)P_{19} = (1,13,9,36,40)$$

$$P_{20} = (1,3,39,4,32)P_{21} = (1,22,18,35,32)P_{22} = (1,5,19,5,30)P_{23} = (1,2,15,16,16)$$

$$P_{24} = (1,40,30,29,1)P_{25} = (0,1,29,26,32)P_{26} = (1,21,38,24,6)P_{27} = (1,23,3,1,12)$$

$$P_{28} = (1,10,11,13,23)P_{29} = (1,9,26,8,27)P_{30} = (1,33,22,14,33)P_{31} = (1,35,20,21,33)$$

$$P_{32} = (1,14,23,9,37)P_{33} = (1,19,2,16,36)P_{34} = (1,29,32,23,22)P_{35} = (1,24,37,37,7)$$

$$P_{36} = (1,2,34,35,32)P_{37} = (1,22,20,11,27)P_{38} = (1,39,15,9,26)P_{39} = (1,22,39,14,6)$$

$$P_{40} = (1,26,8,36,9)P_{41} = (1,19,16,13,27)$$

Stabilizer of order 8 is generated by:

$$g_1 = \begin{bmatrix} 32 & 0 & 0 & 0 & 0 \\ 0 & 9 & 0 & 0 & 0 \\ 0 & 15 & 9 & 13 & 18 \\ 0 & 18 & 0 & 32 & 0 \\ 0 & 13 & 0 & 0 & 32 \end{bmatrix}$$

with 44 fixed points

$$g_2 = \begin{bmatrix} 38 & 33 & 0 & 36 & 18 \\ 0 & 9 & 0 & 0 & 0 \\ 37 & 19 & 32 & 7 & 28 \\ 9 & 5 & 0 & 1 & 1 \\ 18 & 20 & 0 & 4 & 1 \end{bmatrix}$$

with 4 fixed points

$$g_3 = \begin{bmatrix} 14 & 0 & 0 & 7 & 25 \\ 0 & 37 & 15 & 4 & 15 \\ 0 & 14 & 37 & 39 & 13 \\ 33 & 13 & 15 & 9 & 35 \\ 24 & 39 & 4 & 28 & 9 \end{bmatrix}$$

with 42 fixed points

3.6 Isomorphism Type 5

Stabilizer has order 24
Plane intersection type is 6 5^{12} 4^{228} 3^{10428}
Plane invariant is

$$\begin{bmatrix} 6 \end{bmatrix}$$

$\rightarrow$	1_1
6_0	1
36_2	0

$\downarrow$	1_1
6_0	6
36_2	0

$C_0 = \{0, 1, 2, 3, 4, 5\}_6$
$C_1 = \{0\}_1$
$C_2 = \{6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41\}_{36}$

$\rightarrow$	1_1	12_2	60_3	30_7	48_6	18_8	72_9
6_0	1	0	20	10	8	0	0
24_4	0	2	5	0	4	3	6
12_5	0	1	0	5	4	0	12

$\downarrow$	1_1	12_2	60_3	30_7	48_6	18_8	72_9
6_0	6	0	2	2	1	0	0
24_4	0	4	2	0	2	4	2
12_5	0	1	0	2	1	0	2

$C_0 = \{0, 1, 2, 3, 4, 5\}_6$
$C_1 = \{230\}_1$
$C_2 = \{34, 41, 82, 113, 115, 124, 149, 157, 179, 199, 212, 219\}_{12}$
$C_3 = \{3, 4, 5, 6, 7, 8, 11, 16, 17, 24, 25, 26, 27, 28, 35, 43, 53, 54, 60, 63, 64, 71, 74, 78, 88, 89, 90, 94, 95, 97, 103, 104, 109, 110, 111, 132, 136, 144, 15$
$C_4 = \{6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 22, 23, 24, 25, 27, 32, 34, 35, 36, 37, 40\}_{24}$
$C_5 = \{18, 20, 21, 26, 28, 29, 30, 31, 33, 38, 39, 41\}_{12}$
$C_6 = \{2, 10, 14, 15, 18, 22, 23, 30, 32, 37, 38, 39, 40, 48, 50, 52, 55, 57, 58, 61, 62, 72, 75, 76, 79, 83, 84, 98, 108, 112, 123, 131, 134, 135, 138, 141, 142$
$C_7 = \{12, 13, 42, 47, 65, 80, 81, 91, 92, 93, 99, 100, 107, 116, 120, 121, 137, 151, 158, 159, 160, 161, 162, 180, 181, 184, 208, 209, 215, 217\}_{30}$
$C_8 = \{66, 67, 68, 69, 70, 125, 126, 127, 128, 129, 130, 170, 171, 172, 173, 174, 175, 218\}_{18}$
$C_9 = \{0, 1, 9, 19, 20, 21, 29, 31, 33, 36, 44, 45, 46, 49, 51, 56, 59, 73, 77, 85, 86, 87, 96, 101, 102, 105, 106, 114, 117, 118, 119, 122, 133, 139, 140, 143,$
Column cell 1:
Column cell 2:
Column cell 3:
Column cell 6:
Column cell 7:
Column cell 8:
Column cell 9:
Order of the group that is induced on the object is 24
Number of ancestors on 5-sets is 75612.
Number of orbits on 5-sets is 35592.
With 3 orbits on the object
Orbit lengths: 6, 12, 24
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	11	1193	22	59176	33	11898
1	1	12	44390	23	40165	34	19648
2	244	13	58705	24	8683	35	29164
3	245	14	13342	25	30319	36	8722
4	253	15	32217	26	14989	37	62951
5	276	16	656	27	51518	38	27491
6	821	17	58712	28	30495	39	40952
7	18761	18	34320	29	11947	40	8714
8	45255	19	62333	30	14060	41	57167
9	1308	20	56815	31	55992		
10	62006	21	34316	32	20209		

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,27,40,27)P_3 = (0,1,17,20,34)$$

$$P_4 = (0,1,22,4,15)P_5 = (0,1,19,36,12)P_6 = (0,1,38,25,28)P_7 = (1,36,27,36,6)$$

$$P_8 = (1,20,24,18,12)P_9 = (0,1,27,18,19)P_{10} = (1,16,14,38,34)P_{11} = (0,1,15,15,40)$$

$$P_{12} = (1,25,38,13,12)P_{13} = (1,21,28,38,5)P_{14} = (1,4,13,34,31)P_{15} = (1,5,3,31,18)$$

$$P_{16} = (0,1,29,22,8)P_{17} = (1,37,17,38,5)P_{18} = (1,11,10,40,29)P_{19} = (1,24,37,4,34)$$

$$P_{20} = (1,31,24,22,9)P_{21} = (1,22,5,40,29)P_{22} = (1,10,19,11,5)P_{23} = (1,38,21,31,2)$$

$$P_{24} = (1,30,40,29,1)P_{25} = (1,11,8,18,11)P_{26} = (1,10,30,12,33)P_{27} = (1,31,34,21,22)$$

$$P_{28} = (1,9,24,25,11)P_{29} = (1,32,12,34,14)P_{30} = (1,1,29,3,31)P_{31} = (1,40,17,4,4)$$

$$P_{32} = (1,39,7,22,36)P_{33} = (1,5,11,37,14)P_{34} = (1,24,33,11,36)P_{35} = (1,17,1,35,3)$$

$$P_{36} = (1,17,20,28,1)P_{37} = (1,2,22,20,8)P_{38} = (1,30,36,10,19)P_{39} = (1,36,17,1,2)$$

$$P_{40} = (1,3,4,28,1)P_{41} = (1,19,31,21,9)$$

Stabilizer of order 24 is generated by:

$$g_1 = \begin{bmatrix} 14 & 0 & 0 & 0 & 0 \\ 0 & 27 & 0 & 0 & 0 \\ 0 & 4 & 27 & 39 & 13 \\ 0 & 13 & 0 & 14 & 0 \\ 0 & 39 & 0 & 0 & 14 \end{bmatrix}$$

with 44 fixed points

$$g_2 = \begin{bmatrix} 28 & 0 & 0 & 10 & 24 \\ 0 & 40 & 0 & 0 & 0 \\ 0 & 28 & 1 & 30 & 10 \\ 12 & 8 & 0 & 2 & 10 \\ 5 & 24 & 0 & 8 & 2 \end{bmatrix}$$

with 4 fixed points

$$g_3 = \begin{bmatrix} 19 & 0 & 0 & 33 & 30 \\ 0 & 0 & 36 & 0 & 0 \\ 0 & 25 & 19 & 16 & 19 \\ 15 & 0 & 31 & 37 & 5 \\ 37 & 0 & 11 & 4 & 37 \end{bmatrix}$$

with 4 fixed points

3.7 Isomorphism Type 6

Stabilizer has order 60
Plane intersection type is $5^{30}\ 4^{210}\ 3^{10340}$
Plane invariant is too big (30 planes)

$\rightarrow$	30_1
12_0	5
30_2	3

$\downarrow$	30_1
12_0	2
30_2	3

$C_0 = \{1, 3, 9, 11, 14, 17, 18, 20, 26, 38, 40, 41\}_{12}$
$C_1 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29\}_{30}$
$C_2 = \{0, 2, 4, 5, 6, 7, 8, 10, 12, 13, 15, 16, 19, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39\}_{30}$

$\rightarrow$	30_1	60_2	120_4	30_5
12_0	5	10	10	0
30_3	3	4	12	4

$\downarrow$	30_1	60_2	120_4	30_5
12_0	2	2	1	0
30_3	3	2	3	4

$C_0 = \{1, 3, 9, 11, 14, 17, 18, 20, 26, 38, 40, 41\}_{12}$
$C_1 = \{3, 6, 13, 25, 27, 36, 38, 60, 68, 76, 81, 82, 84, 87, 101, 102, 105, 134, 168, 171, 179, 180, 181, 190, 192, 203, 207, 218, 228, 237\}_{30}$
$C_2 = \{4, 11, 15, 20, 28, 31, 32, 33, 34, 39, 41, 44, 46, 48, 49, 50, 52, 55, 57, 62, 63, 66, 69, 75, 78, 83, 91, 95, 117, 119, 120, 121, 123, 125, 126, 131, 133$
$C_3 = \{0, 2, 4, 5, 6, 7, 8, 10, 12, 13, 15, 16, 19, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39\}_{30}$
$C_4 = \{0, 2, 5, 7, 8, 10, 12, 14, 16, 17, 18, 19, 24, 30, 35, 37, 42, 43, 45, 47, 51, 53, 54, 56, 61, 64, 65, 67, 70, 71, 72, 74, 77, 79, 80, 85, 86, 88, 89, 90, 92, 9$
$C_5 = \{1, 9, 21, 22, 23, 26, 29, 40, 58, 59, 73, 93, 94, 97, 111, 132, 149, 150, 157, 159, 161, 165, 174, 175, 201, 210, 220, 221, 222, 224\}_{30}$
Column cell 1:
Column cell 2:
Column cell 4:
Column cell 5:
Order of the group that is induced on the object is 60
Number of ancestors on 5-sets is 15112.
Number of orbits on 5-sets is 14276.
With 2 orbits on the object
Orbit lengths: 12, 30
The points by ranks:

i	Rank
0	0
1	1
2	244
3	245
4	366
5	10531
6	25489
7	68051
8	50623
9	56181
10	34208

i	Rank
11	11857
12	66703
13	26065
14	51521
15	25510
16	26436
17	1507
18	18962
19	25659
20	25521
21	16274

i	Rank
22	9282
23	62317
24	12483
25	60241
26	38954
27	65474
28	32514
29	41939
30	17128
31	47018
32	61924

i	Rank
33	57444
34	65529
35	12485
36	22542
37	66923
38	63950
39	69759
40	27991
41	12880

The points:

$$P_0 = (0, 1, 0, 0, 0) P_1 = (0, 0, 1, 0, 0) P_2 = (0, 1, 27, 40, 27) P_3 = (0, 1, 17, 20, 34)$$

$$P_4 = (0, 1, 22, 27, 25) P_5 = (1, 29, 36, 1, 21) P_6 = (1, 18, 7, 34, 24) P_7 = (1, 30, 36, 30, 20)$$

$$P_8 = (1, 17, 39, 22, 22) P_9 = (1, 30, 16, 13, 4) P_{10} = (1, 7, 33, 33, 29) P_{11} = (1, 18, 3, 40, 14)$$

$$P_{12} = (1, 11, 39, 19, 27) P_{13} = (1, 5, 28, 30, 24) P_{14} = (1, 36, 27, 21, 22) P_{15} = (1, 40, 38, 34, 24)$$

$$P_{16} = (1, 38, 5, 4, 24) P_{17} = (0, 1, 3, 29, 31) P_{18} = (1, 14, 20, 1, 6) P_{19} = (1, 30, 18, 27, 24)$$
$$P_{20} = (1, 32, 27, 34, 24) P_{21} = (1, 22, 4, 40, 7) P_{22} = (1, 30, 20, 14, 1) P_{23} = (1, 23, 35, 39, 34)$$
$$P_{24} = (1, 13, 40, 36, 14) P_{25} = (1, 2, 27, 16, 35) P_{26} = (1, 17, 4, 14, 39) P_{27} = (1, 17, 4, 30, 10)$$
$$P_{28} = (1, 26, 4, 1, 18) P_{29} = (1, 15, 18, 24, 28) P_{30} = (1, 17, 33, 31, 7) P_{31} = (1, 18, 11, 27, 23)$$
$$P_{32} = (1, 17, 1, 26, 34) P_{33} = (1, 22, 1, 2, 9) P_{34} = (1, 10, 7, 38, 10) P_{35} = (1, 17, 21, 33, 14)$$
$$P_{36} = (1, 10, 13, 2, 37) P_{37} = (1, 17, 40, 34, 27) P_{38} = (1, 18, 38, 22, 8) P_{39} = (1, 38, 8, 18, 40)$$
$$P_{40} = (1, 31, 22, 18, 19) P_{41} = (1, 12, 10, 6, 14)$$

Stabilizer of order 60 is generated by:

$$g_1 = \begin{bmatrix} 13 & 0 & 0 & 1 & 27 \\ 0 & 14 & 0 & 0 & 0 \\ 0 & 37 & 14 & 2 & 28 \\ 34 & 28 & 0 & 7 & 34 \\ 21 & 2 & 0 & 19 & 7 \end{bmatrix}$$

with 44 fixed points

$$g_2 = \begin{bmatrix} 1 & 9 & 0 & 34 & 13 \\ 0 & 34 & 16 & 7 & 16 \\ 25 & 40 & 34 & 16 & 22 \\ 27 & 22 & 16 & 16 & 17 \\ 17 & 16 & 7 & 39 & 16 \end{bmatrix}$$

with 44 fixed points

$$g_3 = \begin{bmatrix} 25 & 28 & 0 & 0 & 9 \\ 13 & 9 & 19 & 19 & 8 \\ 0 & 12 & 40 & 35 & 39 \\ 39 & 21 & 16 & 16 & 30 \\ 0 & 7 & 14 & 2 & 33 \end{bmatrix}$$

with 4 fixed points

3.8 Isomorphism Type 7

Stabilizer has order 84
Plane intersection type is $7^6\ 4^{126}\ 3^{10766}$
Plane invariant is

$$\begin{bmatrix} 7 & 0 & 0 & 0 & 0 & 0 \\ 0 & 7 & 0 & 0 & 0 & 0 \\ 0 & 0 & 7 & 0 & 0 & 0 \\ 0 & 0 & 0 & 7 & 0 & 0 \\ 0 & 0 & 0 & 0 & 7 & 0 \\ 0 & 0 & 0 & 0 & 0 & 7 \end{bmatrix}$$

$\rightarrow$	6_1
42_0	1

$\downarrow$	6_1
42_0	7

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41\}_{42}$
$C_1 = \{0, 1, 2, 3, 4, 5\}_6$

$\rightarrow$	6_1	126_2
42_0	1	12

$\downarrow$	6_1	126_2
42_0	7	4

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41\}_{42}$
$C_1 = \{37, 71, 74, 88, 95, 125\}_6$
$C_2 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 38, 39, 40, 41, 42, 43,$
Column cell 1:

Column cell 2:
Order of the group that is induced on the object is 84
Number of ancestors on 5-sets is 10222.
Number of orbits on 5-sets is 10222.
With 1 orbits on the object
Orbit lengths: 42
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	11	19105	22	12224	33	11189
1	1	12	36871	23	66454	34	66914
2	244	13	45212	24	13845	35	25992
3	245	14	10360	25	70087	36	11146
4	371	15	46097	26	12741	37	49034
5	10258	16	31917	27	50586	38	42040
6	43660	17	64872	28	36904	39	21824
7	26070	18	17846	29	63411	40	11848
8	10972	19	60872	30	38614	41	46211
9	16274	20	31182	31	42133		
10	10733	21	57473	32	64838		

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,27,40,27)P_3 = (0,1,17,20,34)$$
$$P_4 = (0,1,30,5,35)P_5 = (1,16,11,15,21)P_6 = (1,25,29,30,25)P_7 = (1,8,38,30,24)$$
$$P_8 = (1,24,32,20,21)P_9 = (1,22,4,40,7)P_{10} = (1,35,37,32,21)P_{11} = (1,16,28,14,6)$$
$$P_{12} = (1,23,22,2,13)P_{13} = (1,6,32,1,12)P_{14} = (1,26,10,11,21)P_{15} = (1,31,3,28,23)$$
$$P_{16} = (1,33,35,36,18)P_{17} = (1,20,17,11,10)P_{18} = (1,21,14,26,6)P_{19} = (1,21,17,5,35)$$
$$P_{20} = (1,40,13,16,11)P_{21} = (1,4,26,2,9)P_{22} = (1,11,2,13,14)P_{23} = (1,20,15,1,27)$$
$$P_{24} = (1,7,21,23,31)P_{25} = (1,22,31,27,40)P_{26} = (1,15,16,15,14)P_{27} = (1,15,25,9,22)$$
$$P_{28} = (1,28,2,24,13)P_{29} = (1,38,36,39,8)P_{30} = (1,4,15,10,39)P_{31} = (1,3,37,37,28)$$
$$P_{32} = (1,16,34,7,10)P_{33} = (1,8,30,10,21)P_{34} = (1,6,4,34,27)P_{35} = (1,25,17,13,24)$$
$$P_{36} = (1,3,25,12,21)P_{37} = (1,22,4,16,38)P_{38} = (1,19,10,21,28)P_{39} = (1,14,2,26,32)$$
$$P_{40} = (1,24,33,40,14)P_{41} = (1,30,36,35,23)$$

Stabilizer of order 84 is generated by:

$$g_1 = \begin{bmatrix} 36 & 0 & 0 & 16 & 22 \\ 0 & 34 & 0 & 0 & 0 \\ 0 & 2 & 34 & 40 & 27 \\ 11 & 27 & 0 & 6 & 14 \\ 8 & 40 & 0 & 3 & 6 \end{bmatrix}$$

with 44 fixed points

$$g_2 = \begin{bmatrix} 32 & 7 & 0 & 35 & 27 \\ 0 & 9 & 38 & 32 & 38 \\ 24 & 14 & 9 & 7 & 11 \\ 34 & 11 & 38 & 36 & 36 \\ 38 & 7 & 32 & 22 & 36 \end{bmatrix}$$

with 42 fixed points

$$g_3 = \begin{bmatrix} 40 & 0 & 12 & 7 & 24 \\ 1 & 22 & 4 & 40 & 7 \\ 37 & 39 & 14 & 21 & 24 \\ 20 & 12 & 36 & 40 & 12 \\ 31 & 31 & 2 & 22 & 15 \end{bmatrix}$$

with 0 fixed points

3.9 Isomorphism Type 8

Stabilizer has order 84
Plane intersection type is $4^{147}\ 3^{10892}$
Plane invariant is too big (147 planes)

$\rightarrow$	147_1
42_0	14

$\downarrow$	147_1
42_0	4

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41\}_{42}$
$C_1 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,$

$\rightarrow$	147_1
42_0	14

$\downarrow$	147_1
42_0	4

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41\}_{42}$
$C_1 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,$
Column cell 1:
Order of the group that is induced on the object is 84
Number of ancestors on 5-sets is 10222.
Number of orbits on 5-sets is 10222.
With 1 orbits on the object
Orbit lengths: 42
The points by ranks:

i	Rank
0	0
1	1
2	244
3	246
4	367
5	14089
6	25179
7	40516
8	13493
9	9760
10	50862

i	Rank
11	35942
12	67024
13	61498
14	22064
15	32302
16	33002
17	13961
18	52479
19	730
20	70571
21	23235

i	Rank
22	59928
23	52388
24	52963
25	39993
26	52415
27	15235
28	62373
29	53940
30	59201
31	16799
32	23944

i	Rank
33	31214
34	41938
35	59240
36	13439
37	58086
38	19270
39	18460
40	17852
41	30833

The points:

$$P_0 = (0, 1, 0, 0, 0) P_1 = (0, 0, 1, 0, 0) P_2 = (0, 1, 27, 40, 27) P_3 = (0, 1, 3, 27, 9)$$
$$P_4 = (0, 1, 38, 10, 29) P_5 = (1, 16, 7, 40, 31) P_6 = (1, 11, 18, 25, 15) P_7 = (1, 30, 5, 27, 2)$$
$$P_8 = (1, 27, 37, 18, 31) P_9 = (1, 12, 10, 2, 1) P_{10} = (1, 1, 13, 18, 22) P_{11} = (1, 37, 13, 16, 16)$$
$$P_{12} = (1, 34, 2, 2, 27) P_{13} = (1, 8, 11, 1, 34) P_{14} = (1, 17, 2, 13, 32) P_{15} = (1, 36, 13, 40, 18)$$
$$P_{16} = (1, 14, 20, 14, 18) P_{17} = (1, 4, 27, 15, 31) P_{18} = (1, 12, 8, 16, 17) P_{19} = (0, 1, 14, 35, 16)$$
$$P_{20} = (1, 17, 36, 39, 40) P_{21} = (1, 30, 9, 37, 37) P_{22} = (1, 30, 33, 8, 35) P_{23} = (1, 13, 23, 33, 17)$$
$$P_{24} = (1, 15, 40, 37, 17) P_{25} = (1, 10, 26, 13, 2) P_{26} = (1, 33, 24, 4, 17) P_{27} = (1, 34, 9, 23, 33)$$
$$P_{28} = (1, 34, 37, 10, 34) P_{29} = (1, 40, 29, 20, 26) P_{30} = (1, 4, 27, 11, 5) P_{31} = (1, 28, 8, 3, 7)$$
$$P_{32} = (1, 22, 2, 38, 15) P_{33} = (1, 32, 15, 1, 11) P_{34} = (1, 32, 11, 24, 28) P_{35} = (1, 15, 10, 19, 5)$$
$$P_{36} = (1, 17, 8, 26, 31) P_{37} = (1, 32, 14, 23, 9) P_{38} = (1, 40, 38, 9, 36) P_{39} = (1, 5, 29, 3, 6)$$
$$P_{40} = (1, 22, 32, 26, 6) P_{41} = (1, 37, 26, 28, 11)$$

Stabilizer of order 84 is generated by:

$$g_1 = \begin{bmatrix} 27 & 38 & 0 & 22 & 36 \\ 0 & 39 & 0 & 0 & 0 \\ 19 & 34 & 39 & 19 & 4 \\ 18 & 4 & 0 & 8 & 21 \\ 11 & 19 & 0 & 31 & 8 \end{bmatrix}$$

with 44 fixed points

$$g_2 = \begin{bmatrix} 32 & 0 & 0 & 20 & 7 \\ 0 & 0 & 36 & 0 & 0 \\ 0 & 5 & 0 & 0 & 0 \\ 24 & 0 & 0 & 27 & 6 \\ 10 & 0 & 0 & 13 & 27 \end{bmatrix}$$

with 42 fixed points

$$g_3 = \begin{bmatrix} 22 & 0 & 14 & 37 & 29 \\ 7 & 31 & 14 & 20 & 23 \\ 0 & 30 & 31 & 11 & 31 \\ 35 & 31 & 23 & 24 & 32 \\ 39 & 11 & 20 & 18 & 24 \end{bmatrix}$$

with 44 fixed points

$$g_4 = \begin{bmatrix} 23 & 0 & 18 & 1 & 2 \\ 9 & 30 & 18 & 35 & 1 \\ 0 & 0 & 30 & 0 & 0 \\ 1 & 0 & 1 & 35 & 7 \\ 21 & 0 & 35 & 12 & 35 \end{bmatrix}$$

with 44 fixed points

3.10 Isomorphism Type 9

Stabilizer has order 68880
Plane intersection type is 3^{11480}
Plane invariant is too big (11480 planes)

$\rightarrow$	11480_1
42_0	820

$\downarrow$	11480_1
42_0	3

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41\}_{42}$
$C_1 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,$

i	Rank
0	0
1	1
2	244
3	382
4	10068
5	59504
6	63072
7	30737
8	60805
9	48258
10	10872

i	Rank
11	58909
12	68861
13	34992
14	42348
15	45050
16	45943
17	54645
18	63924
19	44345
20	48434
21	68553

i	Rank
22	54016
23	32781
24	13026
25	28017
26	50612
27	17531
28	12375
29	59973
30	22838
31	17399
32	62788

i	Rank
33	62424
34	51297
35	13356
36	35511
37	23300
38	45765
39	41421
40	12037
41	25625

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,27,40,27)P_3 = (0,1,6,28,32)$$
$$P_4 = (1,11,23,25,21)P_5 = (1,17,2,34,5)P_6 = (1,10,17,35,8)P_7 = (1,33,3,17,11)$$
$$P_8 = (1,15,21,39,35)P_9 = (1,21,11,36,30)P_{10} = (1,4,17,26,21)P_{11} = (1,2,30,37,5)$$
$$P_{12} = (1,38,16,29,20)P_{13} = (1,10,17,38,16)P_{14} = (1,30,23,9,28)P_{15} = (1,4,6,15,12)$$
$$P_{16} = (1,17,39,5,23)P_{17} = (1,19,21,13,26)P_{18} = (1,28,1,22,8)P_{19} = (1,9,28,37,12)$$
$$P_{20} = (1,28,4,14,30)P_{21} = (1,1,26,13,20)P_{22} = (1,18,19,1,26)P_{23} = (1,30,16,12,18)$$
$$P_{24} = (1,28,25,25,31)P_{25} = (1,9,3,5,19)P_{26} = (1,22,32,22,22)P_{27} = (1,17,36,12,7)$$
$$P_{28} = (1,25,24,1,14)P_{29} = (1,29,37,15,35)P_{30} = (1,39,34,14,37)P_{31} = (1,35,8,36,7)$$
$$P_{32} = (1,7,23,29,34)P_{33} = (1,35,2,16,34)P_{34} = (1,8,3,38,22)P_{35} = (1,35,5,34,31)$$
$$P_{36} = (1,40,22,9,16)P_{37} = (1,32,29,17,37)P_{38} = (1,6,21,23,23)P_{39} = (1,34,16,23,28)$$
$$P_{40} = (1,4,35,28,14)P_{41} = (1,9,28,39,24)$$

Stabilizer of order 68880 is generated by:

$$g_1 = \begin{bmatrix} 20 & 0 & 0 & 30 & 20 \\ 0 & 21 & 0 & 0 & 0 \\ 0 & 0 & 32 & 0 & 0 \\ 22 & 0 & 0 & 7 & 7 \\ 18 & 0 & 0 & 3 & 15 \end{bmatrix}$$

with 4 fixed points

$$g_2 = \begin{bmatrix} 30 & 27 & 0 & 26 & 22 \\ 0 & 4 & 0 & 0 & 0 \\ 18 & 12 & 40 & 40 & 25 \\ 36 & 11 & 0 & 37 & 37 \\ 37 & 21 & 0 & 32 & 20 \end{bmatrix}$$

with 4 fixed points

$$g_3 = \begin{bmatrix} 8 & 0 & 0 & 0 & 0 \\ 0 & 23 & 15 & 29 & 39 \\ 0 & 13 & 23 & 28 & 23 \\ 0 & 23 & 39 & 18 & 39 \\ 0 & 28 & 29 & 5 & 18 \end{bmatrix}$$

with 42 fixed points

$$g_4 = \begin{bmatrix} 9 & 0 & 0 & 0 & 0 \\ 0 & 2 & 13 & 39 & 13 \\ 0 & 14 & 2 & 23 & 38 \\ 0 & 38 & 13 & 39 & 1 \\ 0 & 23 & 39 & 18 & 39 \end{bmatrix}$$

with 44 fixed points

$$g_5 = \begin{bmatrix} 15 & 0 & 0 & 38 & 21 \\ 25 & 29 & 1 & 10 & 33 \\ 0 & 0 & 7 & 0 & 0 \\ 23 & 0 & 19 & 34 & 17 \\ 6 & 0 & 32 & 34 & 11 \end{bmatrix}$$

with 4 fixed points

Chapter 4

The BLT-Sets in Numeric Form

0, 1, 244, 245, 246, 271, 279, 274, 250, 248, 262, 275, 280, 264, 247, 268, 270, 272, 273, 254, 256, 265, 266, 267, 269, 249, 251, 252, 253, 255, 276, 277, 257, 278, 258, 259, 260, 281, 261, 282, 283, 263
0, 1, 244, 245, 246, 271, 279, 274, 250, 248, 262, 275, 280, 264, 247, 268, 270, 272, 273, 254, 256, 40801, 21176, 39896, 15007, 59829, 23409, 23775, 57165, 46809, 54355, 49233, 18274, 49305, 45789, 9601, 35635, 69754, 16605, 35287, 62775, 24273
0, 1, 244, 245, 248, 1097, 48375, 20094, 15614, 40832, 34567, 35866, 821, 60176, 48606, 35229, 38807, 47009, 50769, 20303, 50903, 32994, 57790, 55776, 67989, 66693, 31019, 63317, 12499, 69013, 48591, 33929, 20826, 33672, 16493, 12852, 10555, 49823, 19096, 39990, 57022, 53751
0, 1, 244, 245, 248, 10810, 27504, 43028, 27898, 63801, 67122, 31020, 47671, 23436, 17114, 67965, 29046, 70268, 69360, 36755, 13966, 44705, 43721, 35816, 34072, 29254, 9418, 59098, 42670, 69013, 17402, 19122, 46093, 32087, 43147, 66455, 54807, 58574, 44983, 44693, 31888, 15227
0, 1, 244, 245, 250, 635, 45767, 61365, 279, 62768, 22393, 20546, 65424, 41645, 49236, 42171, 59089, 24914, 40960, 70475, 22103, 21779, 47736, 35934, 8669, 1294, 18350, 45217, 46778, 67113, 15631, 14602, 23668, 20664, 51372, 17093, 21798, 67162, 53894, 19103, 56719, 66621
0, 1, 244, 245, 253, 276, 821, 18761, 45255, 1308, 62006, 1193, 44390, 58705, 13342, 32217, 656, 58712, 34320, 62333, 56815, 34316, 59176, 40165, 8683, 30319, 14989, 51518, 30495, 11947, 14060, 55992, 20209, 11898, 19648, 29164, 8722, 62951, 27491, 40952, 8714, 57167
0, 1, 244, 245, 366, 10531, 25489, 68051, 50623, 56181, 34208, 11857, 66703, 26065, 51521, 25510, 26436, 1507, 18962, 25659, 25521, 16274, 9282, 62317, 12483, 60241, 38954, 65474, 32514, 41939, 17128, 47018, 61924, 57444, 65529, 12485, 22542, 66923, 63950, 69759, 27991, 12880
0, 1, 244, 245, 371, 10258, 43660, 26070, 10972, 16274, 10733, 19105, 36871, 45212, 10360, 46097, 31917, 64872, 17846, 60872, 31182, 57473, 12224, 66454, 13845, 70087, 12741, 50586, 36904, 63411, 38614, 42133, 64838, 11189, 66914, 25992, 11146, 49034, 42040, 21824, 11848, 46211
0, 1, 244, 246, 367, 14089, 25179, 40516, 13493, 9760, 50862, 35942, 67024, 61498, 22064, 32302, 33002, 13961, 52479, 730, 70571, 23235, 59928, 52388, 52963, 39993, 52415, 15235, 62373, 53940, 59201, 16799, 23944, 31214, 41938, 59240, 13439, 58086, 19270, 18460, 17852, 30833
0, 1, 244, 382, 10068, 59504, 63072, 30737, 60805, 48258, 10872, 58909, 68861, 34992, 42348, 45050, 45943, 54645, 63924, 44345, 48434, 68553, 54016, 32781, 13026, 28017, 50612, 17531, 12375, 59973, 22838, 17399, 62788, 62424, 51297, 13356, 35511, 23300, 45765, 41421, 12037, 25625

```
INT BLT_41_size = 42;
INT BLT_41_nb_reps = 10;
INT BLT_41_reps[] = {
0, 1, 244, 245, 246, 271, 279, 274, 250, 248, 262, 275, 280, 264, 247, 268, 270, 272, 273, 254, 256, 265, 266, 267
0, 1, 244, 245, 246, 271, 279, 274, 250, 248, 262, 275, 280, 264, 247, 268, 270, 272, 273, 254, 256, 40801, 21176,
0, 1, 244, 245, 248, 1097, 48375, 20094, 15614, 40832, 34567, 35866, 821, 60176, 48606, 35229, 38807, 47009, 50769
0, 1, 244, 245, 248, 10810, 27504, 43028, 27898, 63801, 67122, 31020, 47671, 23436, 17114, 67965, 29046, 70268, 69
0, 1, 244, 245, 250, 635, 45767, 61365, 279, 62768, 22393, 20546, 65424, 41645, 49236, 42171, 59089, 24914, 40960,
0, 1, 244, 245, 253, 276, 821, 18761, 45255, 1308, 62006, 1193, 44390, 58705, 13342, 32217, 656, 58712, 34320, 623
0, 1, 244, 245, 366, 10531, 25489, 68051, 50623, 56181, 34208, 11857, 66703, 26065, 51521, 25510, 26436, 1507, 189
0, 1, 244, 245, 371, 10258, 43660, 26070, 10972, 16274, 10733, 19105, 36871, 45212, 10360, 46097, 31917, 64872, 17
0, 1, 244, 246, 367, 14089, 25179, 40516, 13493, 9760, 50862, 35942, 67024, 61498, 22064, 32302, 33002, 13961, 524
0, 1, 244, 382, 10068, 59504, 63072, 30737, 60805, 48258, 10872, 58909, 68861, 34992, 42348, 45050, 45943, 54645,
};
```

```
const BYTE *BLT_41_stab_order[] = {
"5785920",
"3528",
"2",
"3",
"8",
"24",
"60",
"84",
"84",
"68880",
};
INT BLT_41_stab_gens[] = {
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37,  0,  0,  0,  0,  0, 33,  0,  0,  0,  0,  0, 39,  0,  0,  0,  0,  0, 37,  0,  0,  0,  0,  0, 37,
38,  0,  0,  0,  0,  0, 39,  0,  0,  0,  0,  0, 16,  0,  0,  0,  0,  0, 38,  0,  0,  0,  0,  0, 38,
18,  0,  0, 40, 14,  0, 33,  0,  0,  0,  0,  0, 33,  0,  0,  7,  0,  0, 28, 29, 20,  0,  0, 15, 28,
25,  0,  0, 39, 28,  0,  6,  0,  0,  0,  0,  2,  6, 13, 18, 14, 18,  0,  5, 10, 40, 13,  0,  8,  5,
18,  0,  0, 24, 33,  0,  0, 21,  0,  0,  0, 18,  0,  0,  0, 37,  0,  0, 10, 23, 12,  0,  0,  2, 10,
11,  0,  0, 40, 14,  0,  5, 12, 36, 12,  0, 22,  5, 30, 10,  7, 10, 12, 28, 13, 20, 30, 36, 35, 28,
39,  0,  0, 38,  1,  0,  1,  0,  0,  0,  0,  0,  1,  0,  0, 21,  0,  0, 22, 34, 19,  0,  0, 19, 22,
 5,  0,  0,  8, 11,  0, 20,  0,  0,  0,  0,  0, 20,  0,  0, 15,  0,  0, 33, 23, 37,  0,  0,  2, 33,
32,  0,  0,  4, 26,  0, 12,  0,  0,  0,  0, 36, 12,  4, 15, 28, 15,  0, 10, 20, 39,  4,  0, 16, 10,
32,  0,  0,  4, 26,  0, 24, 39, 29, 37,  0, 10, 24, 31, 24, 28, 24, 37, 39, 16, 39, 31, 29, 21, 39,
32,  0,  0,  3, 40,  0, 31, 17, 10, 17,  0, 28, 25, 27,  9, 21, 36, 35, 30, 13, 19, 26, 23, 35, 30,
 0,  8, 25, 40, 27,  2,  1, 13,  6,  4, 31, 19,  1, 30, 22, 39,  9, 32, 24, 22, 35, 28,  4, 10, 18,
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13,  0,  0,  1, 27,  0, 14,  0,  0,  0,  0, 37, 14,  2, 28, 34, 28,  0,  7, 34, 21,  2,  0, 19,  7,
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25, 28,  0,  0,  9, 13,  9, 19, 19,  8,  0, 12, 40, 35, 39, 39, 21, 16, 16, 30,  0,  7, 14,  2, 33,
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23,  0, 18,  1,  2,  9, 30, 18, 35,  1,  0,  0, 30,  0,  0,  1,  0,  1, 35,  7, 21,  0, 35, 12, 35,
20,  0,  0, 30, 20,  0, 21,  0,  0,  0,  0,  0, 32,  0,  0, 22,  0,  0,  7,  7, 18,  0,  0,  3, 15,
30, 27,  0, 26, 22,  0,  4,  0,  0,  0, 18, 12, 40, 40, 25, 36, 11,  0, 37, 37, 37, 21,  0, 32, 20,
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15,  0,  0, 38, 21, 25, 29,  1, 10, 33,  0,  0,  7,  0,  0, 23,  0, 19, 34, 17,  6,  0, 32, 34, 11,
};
INT BLT_41_stab_gens_fst[] = { 0, 7, 13, 14, 15, 18, 21, 24, 27, 31};
INT BLT_41_stab_gens_len[] = { 7, 6, 1, 1, 3, 3, 3, 3, 4, 5};
INT BLT_41_make_element_size = 0;
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