BLT-sets of Q(4, 49)

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There are 8 BLT-sets.

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The BLT-Sets

3.1 Isomorphism Type 0

Stabilizer has order 23520000
Plane intersection type is 50
Plane invariant is

$$\begin{bmatrix} 50 \end{bmatrix}$$

$\rightarrow$	1_1
50_0	1

$\downarrow$	1_1
50_0	50

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

$\rightarrow$	1_1
50_0	1

$\downarrow$	1_1
50_0	50

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,$
$C_1 = \{0\}_1$
Column cell 1:
Order of the group that is induced on the object is 235200
Number of ancestors on 5-sets is 18.
Number of orbits on 5-sets is 18.
With 1 orbits on the object
Orbit lengths: 50
The points by ranks:

i	Rank
0	0
1	1
2	484
3	485
4	486
5	490
6	509
7	511
8	521
9	512
10	498
11	488
12	526

i	Rank
13	508
14	487
15	489
16	505
17	492
18	499
19	528
20	494
21	522
22	515
23	530
24	518
25	497

i	Rank
26	525
27	504
28	491
29	519
30	513
31	527
32	506
33	520
34	493
35	507
36	500
37	514
38	501

i	Rank
39	529
40	523
41	502
42	516
43	495
44	524
45	503
46	517
47	531
48	496
49	510

The points:

$$P_0 = (0, 1, 0, 0, 0)P_1 = (0, 0, 1, 0, 0)P_2 = (0, 1, 37, 6, 37)P_3 = (0, 1, 25, 3, 43)$$
$$P_4 = (0, 1, 43, 2, 31)P_5 = (0, 1, 16, 37, 29)P_6 = (0, 1, 39, 47, 24)P_7 = (0, 1, 8, 25, 9)$$
$$P_8 = (0, 1, 12, 41, 35)P_9 = (0, 1, 17, 11, 7)P_{10} = (0, 1, 44, 18, 8)P_{11} = (0, 1, 25, 4, 13)$$
$$P_{12} = (0, 1, 21, 14, 2)P_{13} = (0, 1, 35, 28, 4)P_{14} = (0, 1, 43, 5, 25)P_{15} = (0, 1, 37, 1, 19)$$
$$P_{16} = (0, 1, 28, 8, 20)P_{17} = (0, 1, 34, 30, 28)P_{18} = (0, 1, 48, 39, 11)P_{19} = (0, 1, 22, 27, 40)$$
$$P_{20} = (0, 1, 22, 29, 16)P_{21} = (0, 1, 14, 16, 33)P_{22} = (0, 1, 40, 44, 30)P_{23} = (0, 1, 34, 26, 21)$$
$$P_{24} = (0, 1, 32, 13, 38)P_{25} = (0, 1, 32, 43, 18)P_{26} = (0, 1, 16, 19, 27)P_{27} = (0, 1, 8, 31, 47)$$
$$P_{28} = (0, 1, 24, 22, 15)P_{29} = (0, 1, 31, 23, 34)P_{30} = (0, 1, 39, 9, 32)P_{31} = (0, 1, 7, 32, 10)$$
$$P_{32} = (0, 1, 13, 36, 17)P_{33} = (0, 1, 42, 7, 1)P_{34} = (0, 1, 19, 10, 44)P_{35} = (0, 1, 40, 12, 26)$$

$$P_{36} = (0,1,14,40,23) P_{37} = (0,1,35,21,3) P_{38} = (0,1,12,15,14) P_{39} = (0,1,19,46,12)$$

$$P_{40} = (0,1,48,17,45) P_{41} = (0,1,42,42,6) P_{42} = (0,1,13,20,39) P_{43} = (0,1,7,24,46)$$

$$P_{44} = (0,1,44,38,48) P_{45} = (0,1,31,33,22) P_{46} = (0,1,28,48,36) P_{47} = (0,1,24,34,41)$$

$$P_{48} = (0,1,21,35,5) P_{49} = (0,1,17,45,42)$$

Stabilizer of order 23520000 is generated by:

$$g_1 = \begin{bmatrix} 45 & 0 & 0 & 0 & 0 \\ 0 & 11 & 0 & 0 & 0 \\ 0 & 0 & 11 & 0 & 0 \\ 0 & 0 & 0 & 11 & 0 \\ 0 & 0 & 0 & 0 & 11 \end{bmatrix}_0$$

with 2500 fixed points

$$g_2 = \begin{bmatrix} 25 & 0 & 0 & 0 & 0 \\ 0 & 41 & 0 & 0 & 0 \\ 0 & 0 & 10 & 0 & 0 \\ 0 & 0 & 0 & 41 & 0 \\ 0 & 0 & 0 & 0 & 10 \end{bmatrix}_1$$

with 64 fixed points

$$g_3 = \begin{bmatrix} 46 & 0 & 0 & 0 & 0 \\ 0 & 13 & 0 & 0 & 0 \\ 0 & 0 & 35 & 0 & 0 \\ 0 & 0 & 0 & 25 & 0 \\ 0 & 0 & 0 & 0 & 28 \end{bmatrix}_1$$

with 4 fixed points

$$g_4 = \begin{bmatrix} 43 & 0 & 0 & 0 & 0 \\ 0 & 27 & 0 & 0 & 0 \\ 0 & 0 & 2 & 0 & 0 \\ 0 & 0 & 0 & 13 & 0 \\ 0 & 0 & 0 & 0 & 13 \end{bmatrix}_0$$

with 4 fixed points

$$g_5 = \begin{bmatrix} 8 & 0 & 0 & 30 & 21 \\ 0 & 5 & 0 & 0 & 0 \\ 0 & 0 & 5 & 0 & 0 \\ 35 & 0 & 0 & 23 & 47 \\ 15 & 0 & 0 & 2 & 23 \end{bmatrix}_0$$

with 2500 fixed points

$$g_6 = \begin{bmatrix} 32 & 0 & 0 & 24 & 38 \\ 0 & 7 & 0 & 0 & 0 \\ 0 & 0 & 34 & 0 & 0 \\ 14 & 0 & 0 & 29 & 10 \\ 41 & 0 & 0 & 23 & 2 \end{bmatrix}_1$$

with 50 fixed points

$$g_7 = \begin{bmatrix} 39 & 0 & 0 & 40 & 47 \\ 0 & 7 & 0 & 0 & 0 \\ 0 & 41 & 34 & 26 & 39 \\ 42 & 21 & 0 & 30 & 5 \\ 11 & 26 & 0 & 1 & 36 \end{bmatrix}_1$$

with 50 fixed points

$$g_8 = \begin{bmatrix} 44 & 0 & 0 & 0 & 0 \\ 0 & 44 & 0 & 0 & 0 \\ 0 & 23 & 44 & 20 & 39 \\ 0 & 39 & 0 & 12 & 0 \\ 0 & 20 & 0 & 0 & 12 \end{bmatrix}_0$$

with 52 fixed points

$$g_9 = \begin{bmatrix} 35 & 0 & 0 & 33 & 32 \\ 0 & 0 & 46 & 0 & 0 \\ 0 & 20 & 0 & 0 & 0 \\ 1 & 0 & 0 & 14 & 43 \\ 42 & 0 & 0 & 31 & 12 \end{bmatrix}_1$$

with 50 fixed points

$$g_{10} = \begin{bmatrix} 31 & 0 & 0 & 1 & 37 \\ 0 & 8 & 36 & 48 & 36 \\ 0 & 0 & 8 & 0 & 0 \\ 43 & 0 & 36 & 12 & 17 \\ 4 & 0 & 48 & 48 & 12 \end{bmatrix}_0$$

with 52 fixed points

3.2 Isomorphism Type 1

Stabilizer has order 10000
Plane intersection type is $25^2\ 3^{15000}$
Plane invariant is

$$\begin{bmatrix} 25 & 0 \\ 0 & 25 \end{bmatrix}$$

$\rightarrow$	2_1
50_0	1

$\downarrow$	2_1
50_0	25

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

$\rightarrow$	2_1
50_0	1

$\downarrow$	2_1
50_0	25

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,$
$C_1 = \{0, 1\}_2$
Column cell 1:
Order of the group that is induced on the object is 10000
Number of ancestors on 5-sets is 1009.
Number of orbits on 5-sets is 1009.
With 1 orbits on the object
Orbit lengths: 50
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	13	76296	26	528	39	22316
1	1	14	15707	27	75617	40	516
2	484	15	525	28	507	41	46841
3	485	16	73078	29	43725	42	495
4	486	17	518	30	514	43	62924
5	490	18	491	31	46212	44	119483
6	509	19	32860	32	34701	45	503
7	511	20	513	33	119160	46	103241
8	521	21	33646	34	92703	47	79278
9	512	22	34726	35	501	48	73361
10	498	23	506	36	88781	49	56718
11	488	24	85935	37	68956		
12	39149	25	499	38	42670		

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,37,6,37)P_3 = (0,1,25,3,43)$$
$$P_4 = (0,1,43,2,31)P_5 = (0,1,16,37,29)P_6 = (0,1,39,47,24)P_7 = (0,1,8,25,9)$$
$$P_8 = (0,1,12,41,35)P_9 = (0,1,17,11,7)P_{10} = (0,1,44,18,8)P_{11} = (0,1,25,4,13)$$
$$P_{12} = (1,35,9,3,14)P_{13} = (1,41,25,33,45)P_{14} = (1,27,34,33,4)P_{15} = (0,1,16,19,27)$$
$$P_{16} = (1,20,7,19,31)P_{17} = (0,1,32,13,38)P_{18} = (0,1,24,22,15)P_{19} = (1,46,21,25,46)$$
$$P_{20} = (0,1,39,9,32)P_{21} = (1,23,35,4,46)P_{22} = (1,20,7,2,27)P_{23} = (0,1,13,36,17)$$
$$P_{24} = (1,5,32,16,36)P_{25} = (0,1,48,39,11)P_{26} = (0,1,22,27,40)P_{27} = (1,30,13,2,45)$$
$$P_{28} = (0,1,40,12,26)P_{29} = (1,45,37,19,38)P_{30} = (0,1,35,21,3)P_{31} = (1,13,36,36,17)$$
$$P_{32} = (1,45,37,13,27)P_{33} = (1,41,25,17,22)P_{34} = (1,5,32,48,33)P_{35} = (0,1,12,15,14)$$
$$P_{36} = (1,35,9,15,43)P_{37} = (1,46,21,24,9)P_{38} = (1,23,35,24,13)P_{39} = (1,21,18,8,3)$$
$$P_{40} = (0,1,13,20,39)P_{41} = (1,16,15,43,17)P_{42} = (0,1,7,24,46)P_{43} = (1,21,18,21,20)$$
$$P_{44} = (1,27,34,28,22)P_{45} = (0,1,31,33,22)P_{46} = (1,16,15,36,18)P_{47} = (1,8,11,40,47)$$
$$P_{48} = (1,30,13,17,31)P_{49} = (1,8,11,31,23)$$

Stabilizer of order 10000 is generated by:

$$g_1 = \begin{bmatrix} 11 & 0 & 0 & 43 & 38 \\ 0 & 24 & 0 & 0 & 0 \\ 0 & 0 & 24 & 0 & 0 \\ 9 & 0 & 0 & 14 & 44 \\ 31 & 0 & 0 & 32 & 14 \end{bmatrix}_0$$

with 50 fixed points

$$g_2 = \begin{bmatrix} 18 & 0 & 0 & 35 & 2 \\ 0 & 17 & 0 & 0 & 0 \\ 0 & 0 & 17 & 0 & 0 \\ 1 & 0 & 0 & 3 & 2 \\ 42 & 0 & 0 & 15 & 3 \end{bmatrix}_0$$

with 2402 fixed points

$$g_3 = \begin{bmatrix} 8 & 0 & 0 & 22 & 10 \\ 0 & 11 & 0 & 0 & 0 \\ 0 & 24 & 11 & 19 & 5 \\ 19 & 34 & 0 & 22 & 39 \\ 6 & 23 & 0 & 12 & 24 \end{bmatrix}_1$$

with 10 fixed points

$$g_4 = \begin{bmatrix} 35 & 0 & 0 & 34 & 15 \\ 0 & 20 & 34 & 10 & 44 \\ 0 & 48 & 20 & 8 & 20 \\ 45 & 20 & 44 & 16 & 28 \\ 39 & 8 & 10 & 44 & 16 \end{bmatrix}_0$$

with 2 fixed points

$$g_5 = \begin{bmatrix} 17 & 0 & 0 & 40 & 47 \\ 0 & 18 & 34 & 5 & 28 \\ 0 & 7 & 0 & 0 & 0 \\ 42 & 25 & 0 & 19 & 17 \\ 11 & 5 & 0 & 44 & 35 \end{bmatrix}_1$$

with 8 fixed points

$$g_6 = \begin{bmatrix} 0 & 47 & 41 & 30 & 17 \\ 23 & 10 & 31 & 43 & 5 \\ 5 & 25 & 15 & 1 & 31 \\ 44 & 31 & 27 & 21 & 19 \\ 10 & 18 & 43 & 19 & 16 \end{bmatrix}_1$$

with 400 fixed points

3.3 Isomorphism Type 2

Stabilizer has order 940800
Plane intersection type is 8^{350}
Plane invariant is too big (350 planes)

$\rightarrow$	350_1
50_0	56

$\downarrow$	350_1
50_0	8

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

$\rightarrow$	350_1
50_0	56

$\downarrow$	350_1
50_0	8

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,$
$C_1 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,$
Column cell 1:
Order of the group that is induced on the object is 235200
Number of ancestors on 5-sets is 48.
Number of orbits on 5-sets is 18.
With 1 orbits on the object
Orbit lengths: 50
The points by ranks:

i	Rank
0	0
1	1
2	484
3	485
4	486
5	787
6	1730
7	1798
8	1325
9	1822
10	803
11	1692
12	779

i	Rank
13	811
14	819
15	795
16	2196
17	1340
18	1220
19	2253
20	1804
21	2173
22	2246
23	1701
24	1237
25	2199

i	Rank
26	1247
27	1710
28	2239
29	1310
30	2183
31	1344
32	2232
33	487
34	1712
35	1215
36	1816
37	2209
38	1225

i	Rank
39	488
40	1329
41	1792
42	1721
43	2225
44	2186
45	489
46	1810
47	2218
48	1242
49	1314

The points:

$$P_0 = (0, 1, 0, 0, 0)P_1 = (0, 0, 1, 0, 0)P_2 = (0, 1, 37, 6, 37)P_3 = (0, 1, 25, 3, 43)$$
$$P_4 = (0, 1, 43, 2, 31)P_5 = (0, 1, 19, 39, 33)P_6 = (0, 1, 43, 26, 16)P_7 = (0, 1, 13, 42, 38)$$
$$P_8 = (0, 1, 25, 47, 7)P_9 = (0, 1, 31, 14, 29)P_{10} = (0, 1, 31, 44, 20)P_{11} = (0, 1, 43, 30, 40)$$
$$P_{12} = (0, 1, 13, 22, 10)P_{13} = (0, 1, 19, 17, 23)P_{14} = (0, 1, 13, 34, 46)P_{15} = (0, 1, 31, 12, 36)$$
$$P_{16} = (0, 1, 43, 20, 17)P_{17} = (0, 1, 37, 38, 14)P_{18} = (0, 1, 19, 40, 45)P_{19} = (0, 1, 31, 19, 5)$$
$$P_{20} = (0, 1, 19, 28, 9)P_{21} = (0, 1, 37, 10, 12)P_{22} = (0, 1, 13, 13, 6)P_{23} = (0, 1, 37, 15, 48)$$
$$P_{24} = (0, 1, 31, 48, 26)P_{25} = (0, 1, 25, 23, 22)P_{26} = (0, 1, 13, 32, 15)P_{27} = (0, 1, 25, 45, 32)$$
$$P_{28} = (0, 1, 19, 25, 4)P_{29} = (0, 1, 43, 29, 21)P_{30} = (0, 1, 25, 33, 34)P_{31} = (0, 1, 43, 27, 28)$$
$$P_{32} = (0, 1, 19, 31, 3)P_{33} = (0, 1, 43, 5, 25)P_{34} = (0, 1, 25, 11, 24)P_{35} = (0, 1, 13, 24, 41)$$
$$P_{36} = (0, 1, 13, 7, 18)P_{37} = (0, 1, 37, 46, 44)P_{38} = (0, 1, 31, 8, 30)P_{39} = (0, 1, 25, 4, 13)$$

$$P_{40} = (0,1,25,9,42) P_{41} = (0,1,31,35,27) P_{42} = (0,1,37,41,8) P_{43} = (0,1,13,43,1)$$

$$P_{44} = (0,1,43,36,39) P_{45} = (0,1,37,1,19) P_{46} = (0,1,19,21,47) P_{47} = (0,1,31,37,2)$$

$$P_{48} = (0,1,19,16,11) P_{49} = (0,1,37,18,35)$$

Stabilizer of order 940800 is generated by:

$$g_1 = \begin{bmatrix} 33 & 0 & 0 & 0 & 0 \\ 0 & 23 & 0 & 0 & 0 \\ 0 & 0 & 23 & 0 & 0 \\ 0 & 0 & 0 & 23 & 0 \\ 0 & 0 & 0 & 0 & 23 \end{bmatrix}_0$$

with 2500 fixed points

$$g_2 = \begin{bmatrix} 44 & 0 & 0 & 0 & 0 \\ 0 & 9 & 0 & 0 & 0 \\ 0 & 0 & 4 & 0 & 0 \\ 0 & 0 & 0 & 9 & 0 \\ 0 & 0 & 0 & 0 & 4 \end{bmatrix}_1$$

with 64 fixed points

$$g_3 = \begin{bmatrix} 40 & 0 & 0 & 0 & 0 \\ 0 & 16 & 0 & 0 & 0 \\ 0 & 0 & 16 & 0 & 0 \\ 0 & 0 & 0 & 40 & 0 \\ 0 & 0 & 0 & 0 & 40 \end{bmatrix}_0$$

with 52 fixed points

$$g_4 = \begin{bmatrix} 37 & 0 & 0 & 0 & 0 \\ 0 & 31 & 0 & 0 & 0 \\ 0 & 0 & 13 & 0 & 0 \\ 0 & 0 & 0 & 19 & 0 \\ 0 & 0 & 0 & 0 & 19 \end{bmatrix}_0$$

with 4 fixed points

$$g_5 = \begin{bmatrix} 22 & 0 & 0 & 0 & 0 \\ 0 & 26 & 0 & 0 & 0 \\ 0 & 0 & 36 & 0 & 0 \\ 0 & 0 & 0 & 13 & 0 \\ 0 & 0 & 0 & 0 & 43 \end{bmatrix}_1$$

with 10 fixed points

$$g_6 = \begin{bmatrix} 39 & 0 & 0 & 0 & 0 \\ 0 & 39 & 0 & 0 & 0 \\ 0 & 0 & 39 & 0 & 0 \\ 0 & 0 & 0 & 0 & 11 \\ 0 & 0 & 0 & 20 & 0 \end{bmatrix}_0$$

with 2402 fixed points

$$g_7 = \begin{bmatrix} 18 & 0 & 0 & 0 & 0 \\ 0 & 21 & 0 & 0 & 0 \\ 0 & 11 & 39 & 15 & 12 \\ 0 & 14 & 0 & 28 & 0 \\ 0 & 15 & 0 & 0 & 17 \end{bmatrix}_1$$

with 64 fixed points

$$g_8 = \begin{bmatrix} 39 & 0 & 0 & 0 & 0 \\ 0 & 38 & 0 & 0 & 0 \\ 0 & 25 & 6 & 19 & 5 \\ 0 & 29 & 0 & 38 & 0 \\ 0 & 37 & 0 & 0 & 6 \end{bmatrix}_1$$

with 1 fixed points

$$g_9 = \begin{bmatrix} 12 & 0 & 0 & 0 & 0 \\ 0 & 0 & 41 & 0 & 0 \\ 0 & 36 & 44 & 23 & 34 \\ 0 & 0 & 11 & 0 & 26 \\ 0 & 0 & 39 & 46 & 0 \end{bmatrix}_0$$

with 4 fixed points

$$g_{10} = \begin{bmatrix} 21 & 0 & 0 & 0 & 0 \\ 0 & 21 & 1 & 14 & 2 \\ 0 & 15 & 35 & 41 & 35 \\ 0 & 42 & 4 & 7 & 4 \\ 0 & 45 & 28 & 30 & 7 \end{bmatrix}_0$$

with 4 fixed points

3.4 Isomorphism Type 3

Stabilizer has order 40
Plane intersection type is $4^{450}\ 3^{17800}$
Plane invariant is too big (450 planes)

$\rightarrow$	20_1	120_3	120_4	190_5
10_0	8	24	12	0
40_2	0	6	9	19

$\downarrow$	20_1	120_3	120_4	190_5
10_0	4	2	1	0
40_2	0	2	3	4

$C_0 = \{0, 2, 13, 19, 24, 25, 27, 44, 46, 48\}_{10}$
$C_1 = \{8, 18, 19, 24, 35, 36, 40, 78, 127, 134, 150, 184, 186, 213, 298, 358, 363, 406, 438, 449\}_{20}$
$C_2 = \{1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 20, 21, 22, 23, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 45, 47, 49\}_{40}$
$C_3 = \{0, 2, 6, 7, 10, 13, 25, 38, 39, 50, 52, 55, 56, 59, 61, 62, 63, 64, 66, 67, 74, 76, 80, 81, 82, 83, 84, 86, 97, 107, 110, 113, 115, 118, 122, 123, 126, 131$
$C_4 = \{1, 3, 4, 9, 11, 14, 15, 16, 20, 21, 22, 26, 27, 32, 34, 45, 46, 47, 48, 51, 54, 57, 58, 70, 73, 75, 77, 79, 92, 99, 101, 102, 103, 106, 112, 119, 121, 128,$
$C_5 = \{5, 12, 17, 23, 28, 29, 30, 31, 33, 37, 41, 42, 43, 44, 49, 53, 60, 65, 68, 69, 71, 72, 85, 87, 88, 89, 90, 91, 93, 94, 95, 96, 98, 100, 104, 105, 108, 109,$

$\rightarrow$	20_1	120_3	120_4	190_5
10_0	8	24	12	0
40_2	0	6	9	19

$\downarrow$	20_1	120_3	120_4	190_5
10_0	4	2	1	0
40_2	0	2	3	4

$C_0 = \{0, 2, 13, 19, 24, 25, 27, 44, 46, 48\}_{10}$
$C_1 = \{31, 33, 34, 63, 109, 149, 155, 184, 208, 241, 291, 307, 330, 334, 360, 379, 380, 388, 389, 399\}_{20}$
$C_2 = \{1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 20, 21, 22, 23, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 45, 47, 49\}_{40}$
$C_3 = \{4, 5, 7, 14, 15, 16, 28, 32, 38, 48, 49, 53, 54, 55, 65, 71, 80, 81, 84, 86, 91, 93, 95, 96, 102, 108, 112, 114, 115, 117, 122, 123, 125, 126, 128, 129, 1$
$C_4 = \{1, 2, 11, 12, 17, 18, 19, 27, 35, 40, 43, 50, 51, 52, 56, 57, 60, 62, 67, 68, 74, 77, 87, 89, 94, 99, 101, 104, 106, 118, 127, 131, 133, 140, 143, 147, 14$
$C_5 = \{0, 3, 6, 8, 9, 10, 13, 20, 21, 22, 23, 24, 25, 26, 29, 30, 36, 37, 39, 41, 42, 44, 45, 46, 47, 58, 59, 61, 64, 66, 69, 70, 72, 73, 75, 76, 78, 79, 82, 83, 85, 8$
Column cell 1:
Column cell 3:
Column cell 4:
Column cell 5:
Order of the group that is induced on the object is 40
Number of ancestors on 5-sets is 54416.
Number of orbits on 5-sets is 53045.
With 2 orbits on the object
Orbit lengths: 10, 40
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	13	38489	26	104676	39	112954
1	1	14	17614	27	15945	40	34053
2	484	15	51183	28	14737	41	46438
3	485	16	959	29	87248	42	56117
4	538	17	119580	30	22696	43	98269
5	12621	18	91919	31	35897	44	25108
6	89995	19	20325	32	18285	45	40922
7	47533	20	109111	33	60196	46	27235
8	37786	21	66691	34	77042	47	117361
9	55341	22	110697	35	18346	48	63970
10	91922	23	91312	36	118856	49	56718
11	30148	24	105436	37	51180		
12	34998	25	52075	38	32457		

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,37,6,37)P_3 = (0,1,25,3,43)$$

$$P_4 = (0,1,14,37,15)P_5 = (1,20,37,38,1)P_6 = (1,46,39,18,43)P_7 = (1,28,46,25,17)$$

$$P_8 = (1,5,19,40,32)P_9 = (1,41,37,27,23)P_{10} = (1,17,30,34,33)P_{11} = (1,7,1,22,26)$$

$$P_{12} = (1,42,5,23,27)P_{13} = (1,28,15,4,32)P_{14} = (1,11,35,14,5)P_{15} = (1,38,32,45,41)$$

$$P_{16} = (0,1,48,32,2)P_{17} = (1,24,26,44,22)P_{18} = (1,1,24,34,33)P_{19} = (1,48,41,9,2)$$

$$P_{20} = (1,28,2,2,24)P_{21} = (1,41,17,41,21)P_{22} = (1,16,6,8,24)P_{23} = (1,41,14,44,33)$$

$$P_{24} = (1,20,21,5,37)P_{25} = (1,41,39,6,41)P_{26} = (1,42,36,25,37)P_{27} = (1,16,6,30,4)$$

$$P_{28} = (1,48,10,26,4)P_{29} = (1,13,45,9,8)P_{30} = (1,45,42,24,3)P_{31} = (1,22,15,27,27)$$

$$P_{32} = (1,18,37,21,5)P_{33} = (1,22,1,25,48)P_{34} = (1,16,30,28,45)P_{35} = (1,3,19,22,5)$$

$$P_{36} = (1,12,3,7,22)P_{37} = (1,21,26,45,41)P_{38} = (1,48,6,11,46)P_{39} = (1,27,19,23,29)$$

$$P_{40} = (1,44,41,32,46)P_{41} = (1,45,7,39,17)P_{42} = (1,13,4,14,23)P_{43} = (1,21,46,18,40)$$

$$P_{44} = (1,43,1,44,6)P_{45} = (1,39,20,41,14)P_{46} = (1,15,17,22,19)P_{47} = (1,44,10,33,30)$$

$$P_{48} = (1,27,28,9,44)P_{49} = (1,8,11,31,23)$$

Stabilizer of order 40 is generated by:

$$g_1 = \begin{bmatrix} 12 & 0 & 0 & 0 & 0 \\ 0 & 44 & 0 & 0 & 0 \\ 0 & 23 & 44 & 20 & 39 \\ 0 & 39 & 0 & 12 & 0 \\ 0 & 20 & 0 & 0 & 12 \end{bmatrix}_0$$

with 52 fixed points

$$g_2 = \begin{bmatrix} 46 & 20 & 0 & 24 & 27 \\ 0 & 32 & 0 & 0 & 0 \\ 10 & 47 & 24 & 7 & 23 \\ 38 & 31 & 0 & 12 & 42 \\ 40 & 25 & 0 & 43 & 12 \end{bmatrix}_0$$

with 4 fixed points

$$g_3 = \begin{bmatrix} 29 & 46 & 0 & 12 & 28 \\ 0 & 32 & 18 & 24 & 18 \\ 4 & 27 & 13 & 43 & 6 \\ 44 & 10 & 18 & 22 & 29 \\ 42 & 24 & 43 & 27 & 7 \end{bmatrix}_1$$

with 400 fixed points

$$g_4 = \begin{bmatrix} 18 & 13 & 10 & 46 & 9 \\ 4 & 37 & 47 & 2 & 39 \\ 0 & 45 & 7 & 34 & 3 \\ 30 & 30 & 10 & 10 & 22 \\ 11 & 2 & 26 & 6 & 9 \end{bmatrix}_1$$

with 0 fixed points

3.5 Isomorphism Type 4

Stabilizer has order 8
Plane intersection type is $4^{408}\ 3^{17968}$
Plane invariant is too big (408 planes)

$\rightarrow$	2_1	8_7	8_{10}	8_9	16_{11}	8_{44}	8_{12}	8_{14}	8_{45}	8_{13}	8_8	16_{17}	8_{46}	8_{18}	8_{19}	16_{20}	24_{47}	8_{16}	8_{21}	16_{48}	8_{23}	8_{22}	8_{49}	8_{24}
8_0	1	2	2	2	4	2	2	2	2	2	1	2	1	1	1	2	3	1	1	2	1	1	1	1
8_3	0	1	1	0	0	0	0	0	0	0	1	2	1	1	1	2	3	0	0	0	0	0	0	0
8_4	0	1	0	2	0	0	0	0	0	0	2	2	1	0	0	0	0	2	1	2	1	0	0	0
8_2	0	0	0	0	4	0	0	1	0	0	0	2	0	2	0	2	0	0	2	2	0	2	1	1
8_{43}	0	0	0	0	0	2	1	0	1	0	0	0	1	0	1	0	3	1	0	2	1	1	2	0
2_6	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
8_5	0	0	1	0	0	0	0	1	1	2	0	0	0	0	0	2	3	0	0	0	1	0	0	1

$C_0 = \{3, 4, 14, 17, 22, 25, 27, 43\}_8$
$C_1 = \{15, 356\}_2$
$C_2 = \{10, 15, 23, 24, 40, 44, 46, 48\}_8$
$C_3 = \{6, 7, 20, 33, 34, 35, 36, 37\}_8$
$C_4 = \{0, 1, 12, 26, 28, 30, 31, 39\}_8$
$C_5 = \{5, 8, 11, 16, 18, 19, 21, 32\}_8$
$C_6 = \{38, 49\}_2$
$C_7 = \{64, 91, 106, 172, 221, 257, 263, 358\}_8$
$C_8 = \{12, 76, 90, 182, 220, 310, 335, 366\}_8$
$C_9 = \{23, 32, 156, 158, 178, 283, 286, 382\}_8$
$C_{10} = \{58, 79, 82, 254, 264, 288, 361, 365\}_8$
$C_{11} = \{6, 50, 60, 87, 103, 108, 131, 134, 200, 233, 244, 246, 256, 322, 328, 403\}_{16}$
$C_{12} = \{44, 81, 88, 99, 161, 166, 367, 384\}_8$
$C_{13} = \{98, 186, 271, 347, 372, 394, 399, 400\}_8$
$C_{14} = \{115, 243, 258, 261, 273, 341, 389, 390\}_8$
$C_{15} = \{1, 152, 189, 212, 262, 307, 388, 402\}_8$
$C_{16} = \{96, 110, 124, 145, 160, 204, 232, 318\}_8$
$C_{17} = \{26, 61, 62, 70, 139, 149, 179, 180, 206, 229, 282, 299, 304, 337, 339, 383\}_{16}$
$C_{18} = \{49, 52, 164, 240, 251, 281, 343, 370\}_8$
$C_{19} = \{45, 123, 163, 168, 192, 205, 259, 275\}_8$
$C_{20} = \{16, 25, 93, 95, 132, 195, 237, 241, 272, 294, 295, 306, 319, 342, 355, 392\}_{16}$
$C_{21} = \{55, 100, 101, 147, 188, 312, 351, 376\}_8$
$C_{22} = \{42, 68, 129, 202, 248, 253, 309, 360\}_8$
$C_{23} = \{48, 57, 69, 165, 277, 301, 353, 386\}_8$
$C_{24} = \{117, 126, 127, 187, 228, 255, 313, 398\}_8$
$C_{25} = \{27, 78, 83, 136, 162, 169, 217, 226, 268, 270, 357, 387\}_{12}$
$C_{26} = \{119, 140, 143, 175, 177, 279, 280, 333\}_8$
$C_{27} = \{0, 4, 11, 13, 54, 112, 116, 137, 184, 245, 260, 266, 297, 305, 325, 363\}_{16}$
$C_{28} = \{17, 36, 176, 227, 350, 379, 381, 401\}_8$
$C_{29} = \{3, 19, 113, 155, 191, 198, 208, 211, 242, 247, 265, 321, 334, 369, 374, 391\}_{16}$
$C_{30} = \{196, 203, 225, 249, 298, 314, 330, 346\}_8$
$C_{31} = \{43, 130, 151, 214, 218, 222, 231, 385\}_8$
$C_{32} = \{7, 141, 278, 308, 327, 349, 395, 397\}_8$
$C_{33} = \{2, 71, 77, 125, 154, 303, 324, 344\}_8$
$C_{34} = \{39, 66, 194, 209, 289, 293, 362, 406\}_8$

$C_{35} = \{22, 38, 47, 63, 97, 371, 393, 404\}_8$
$C_{36} = \{10, 94, 138, 146, 171, 173, 348, 373\}_8$
$C_{37} = \{53, 174, 199, 201, 239, 285, 311, 316\}_8$
$C_{38} = \{9, 20, 142, 396\}_4$
$C_{39} = \{18, 122, 150, 153, 274, 317, 331, 378\}_8$
$C_{40} = \{21, 354\}_2$
$C_{41} = \{109, 144, 250, 292\}_4$
$C_{42} = \{345, 375\}_2$
$C_{43} = \{2, 9, 13, 29, 41, 42, 45, 47\}_8$
$C_{44} = \{41, 46, 102, 105, 118, 148, 167, 193\}_8$
$C_{45} = \{14, 28, 51, 73, 75, 80, 104, 114\}_8$
$C_{46} = \{8, 35, 135, 183, 210, 336, 377, 380\}_8$
$C_{47} = \{31, 33, 40, 84, 85, 86, 89, 111, 133, 157, 190, 207, 213, 215, 219, 223, 238, 269, 287, 290, 300, 323, 340, 352\}_{24}$
$C_{48} = \{24, 29, 56, 120, 128, 159, 181, 197, 235, 284, 296, 302, 315, 320, 332, 338\}_{16}$
$C_{49} = \{59, 65, 92, 121, 236, 252, 267, 364\}_8$
$C_{50} = \{170, 216, 276, 368\}_4$
$C_{51} = \{30, 34, 37, 72, 74, 107, 326, 405\}_8$
$C_{52} = \{5, 67, 185, 224, 230, 234, 329, 359\}_8$
$C_{53} = \{291, 407\}_2$

$\rightarrow$	2_1	8_7	8_{10}	8_9	16_{11}	8_{44}	8_{12}	8_{14}	8_{45}	8_{13}	8_8	16_{17}	8_{46}	8_{18}	8_{19}	16_{20}	24_{47}	8_{16}	8_{21}	16_{48}	8_{23}	8_{22}	8_{49}	8_{24}
8_0	1	2	2	2	4	2	2	2	2	2	1	2	1	1	1	2	3	1	1	2	1	1	1	1
8_3	0	1	1	0	0	0	0	0	0	0	1	2	1	1	1	2	3	0	0	0	0	0	0	0
8_4	0	1	0	2	0	0	0	0	0	0	2	2	1	0	0	0	0	2	1	2	1	0	0	0
8_2	0	0	0	0	4	0	0	1	0	0	0	2	0	2	0	2	0	0	2	2	0	2	1	1
8_{43}	0	0	0	0	0	2	1	0	1	0	0	0	1	0	1	0	3	1	0	2	1	1	2	0
2_6	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
8_5	0	0	1	0	0	0	0	1	1	2	0	0	0	0	0	2	3	0	0	0	1	0	0	1

$\downarrow$	2_1	8_7	8_{10}	8_9	16_{11}	8_{44}	8_{12}	8_{14}	8_{45}	8_{13}	8_8	16_{17}	8_{46}	8_{18}	8_{19}	16_{20}	24_{47}	8_{16}	8_{21}	16_{48}	8_{23}	8_{22}	8_{49}	8_{24}
8_0	4	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8_3	0	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0
8_4	0	1	0	2	0	0	0	0	0	0	2	1	1	0	0	0	0	2	1	1	1	0	0	0
8_2	0	0	0	0	2	0	0	1	0	0	0	1	0	2	0	1	0	0	2	1	0	2	1	1
8_{43}	0	0	0	0	0	2	1	0	1	0	0	0	1	0	1	0	1	1	0	1	1	1	2	0
2_6	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
8_5	0	0	1	0	0	0	0	1	1	2	0	0	0	0	0	1	1	0	0	0	1	0	0	1

$C_0 = \{3, 4, 14, 17, 22, 25, 27, 43\}_8$
$C_1 = \{362, 392\}_2$
$C_2 = \{10, 15, 23, 24, 40, 44, 46, 48\}_8$
$C_3 = \{6, 7, 20, 33, 34, 35, 36, 37\}_8$
$C_4 = \{0, 1, 12, 26, 28, 30, 31, 39\}_8$
$C_5 = \{5, 8, 11, 16, 18, 19, 21, 32\}_8$
$C_6 = \{38, 49\}_2$
$C_7 = \{44, 123, 134, 165, 237, 281, 315, 391\}_8$
$C_8 = \{48, 110, 140, 205, 254, 324, 332, 388\}_8$
$C_9 = \{10, 30, 38, 149, 193, 227, 279, 358\}_8$
$C_{10} = \{98, 114, 236, 241, 329, 331, 343, 389\}_8$
$C_{11} = \{3, 4, 42, 78, 128, 156, 166, 186, 210, 239, 267, 298, 341, 345, 369, 402\}_{16}$
$C_{12} = \{71, 147, 196, 318, 326, 330, 349, 378\}_8$
$C_{13} = \{50, 138, 163, 190, 233, 371, 385, 397\}_8$
$C_{14} = \{60, 62, 63, 102, 238, 308, 374, 375\}_8$
$C_{15} = \{11, 122, 135, 192, 216, 275, 289, 370\}_8$
$C_{16} = \{131, 164, 264, 287, 292, 303, 312, 407\}_8$
$C_{17} = \{28, 46, 112, 142, 143, 153, 171, 203, 204, 228, 250, 262, 290, 336, 340, 379\}_{16}$
$C_{18} = \{9, 22, 59, 124, 246, 285, 387, 399\}_8$
$C_{19} = \{1, 16, 145, 231, 263, 273, 304, 348\}_8$
$C_{20} = \{61, 64, 155, 202, 217, 222, 223, 247, 271, 320, 322, 356, 361, 373, 393, 406\}_{16}$
$C_{21} = \{74, 85, 194, 200, 213, 276, 316, 317\}_8$

$C_{22} = \{55, 127, 170, 174, 198, 242, 266, 300\}_8$
$C_{23} = \{51, 56, 84, 117, 148, 337, 346, 394\}_8$
$C_{24} = \{40, 65, 212, 240, 277, 302, 307, 372\}_8$
$C_{25} = \{20, 35, 43, 66, 87, 99, 120, 234, 284, 286, 328, 376\}_{12}$
$C_{26} = \{39, 116, 144, 206, 229, 280, 294, 306\}_8$
$C_{27} = \{12, 14, 17, 32, 89, 90, 107, 139, 154, 159, 160, 172, 181, 188, 220, 235\}_{16}$
$C_{28} = \{70, 95, 100, 180, 189, 251, 351, 380\}_8$
$C_{29} = \{0, 73, 94, 96, 121, 136, 179, 195, 244, 245, 269, 274, 310, 364, 400, 405\}_{16}$
$C_{30} = \{13, 27, 101, 126, 219, 252, 265, 270\}_8$
$C_{31} = \{68, 132, 151, 173, 255, 258, 299, 377\}_8$
$C_{32} = \{53, 91, 93, 185, 215, 230, 295, 403\}_8$
$C_{33} = \{81, 150, 157, 201, 209, 218, 335, 365\}_8$
$C_{34} = \{69, 97, 113, 175, 224, 272, 339, 366\}_8$
$C_{35} = \{23, 83, 176, 191, 319, 359, 368, 386\}_8$
$C_{36} = \{19, 75, 182, 282, 296, 321, 384, 396\}_8$
$C_{37} = \{2, 15, 18, 37, 129, 211, 214, 268\}_8$
$C_{38} = \{76, 92, 183, 360\}_4$
$C_{39} = \{47, 108, 152, 232, 288, 305, 382, 401\}_8$
$C_{40} = \{88, 199\}_2$
$C_{41} = \{29, 125, 293, 313\}_4$
$C_{42} = \{383, 398\}_2$
$C_{43} = \{2, 9, 13, 29, 41, 42, 45, 47\}_8$
$C_{44} = \{41, 137, 146, 161, 162, 291, 347, 350\}_8$
$C_{45} = \{79, 86, 168, 178, 309, 333, 334, 363\}_8$
$C_{46} = \{52, 105, 184, 260, 278, 297, 352, 381\}_8$
$C_{47} = \{7, 21, 24, 25, 33, 34, 45, 57, 58, 72, 80, 103, 115, 119, 167, 253, 257, 259, 261, 311, 325, 327, 395, 404\}_{24}$
$C_{48} = \{5, 6, 54, 77, 104, 109, 111, 130, 141, 207, 221, 226, 301, 344, 355, 357\}_{16}$
$C_{49} = \{31, 82, 158, 197, 243, 248, 323, 342\}_8$
$C_{50} = \{26, 118, 256, 283\}_4$
$C_{51} = \{8, 169, 177, 208, 314, 353, 354, 367\}_8$
$C_{52} = \{36, 67, 106, 133, 187, 249, 338, 390\}_8$
$C_{53} = \{49, 225\}_2$
Column cell 1:
Column cell 7:
Column cell 8:
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:
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Column cell 34:
Column cell 35:
Column cell 36:
Column cell 37:
Column cell 38:
Column cell 39:
Column cell 40:
Column cell 41:
Column cell 42:
Column cell 44:
Column cell 45:
Column cell 46:
Column cell 47:
Column cell 48:
Column cell 49:
Column cell 50:
Column cell 51:
Column cell 52:
Column cell 53:
Order of the group that is induced on the object is 8
Number of ancestors on 5-sets is 264920.
Number of orbits on 5-sets is 264920.
With 7 orbits on the object
Orbit lengths: $2,\ 8^6$
The points by ranks:

i	Rank
0	0
1	1
2	484
3	485
4	538
5	14856
6	86512
7	60216
8	83809
9	67488
10	115082
11	12567
12	20555

i	Rank
13	14317
14	33281
15	41427
16	22364
17	114360
18	75347
19	53173
20	80500
21	42773
22	37913
23	66855
24	27119
25	22901

i	Rank
26	21802
27	106319
28	69351
29	67475
30	92875
31	12342
32	65209
33	57557
34	44116
35	44128
36	14969
37	88211
38	85497

i	Rank
39	14630
40	57220
41	107619
42	33232
43	75247
44	63274
45	106314
46	20511
47	1242
48	101655
49	107302

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,37,6,37)P_3 = (0,1,25,3,43)$$

$$P_4 = (0,1,14,37,15)P_5 = (1,10,25,27,4)P_6 = (1,47,14,33,8)P_7 = (1,36,25,25,48)$$

$$P_8 = (1,22,10,1,12)P_9 = (1,31,29,44,21)P_{10} = (1,22,20,15,10)P_{11} = (1,7,33,39,1)$$

$$P_{12} = (1,38,34,31,2)P_{13} = (1,22,46,35,4)P_{14} = (1,3,13,29,46)P_{15} = (1,46,22,41,13)$$

$$P_{16} = (1,13,18,10,3)P_{17} = (1,36,25,4,10)P_{18} = (1,41,12,10,45)P_{19} = (1,2,8,11,7)$$

$$P_{20} = (1,22,1,44,28)P_{21} = (1,21,4,16,13)P_{22} = (1,42,15,33,32)P_{23} = (1,17,33,22,21)$$

$$P_{24} = (1,26,24,43,19)P_{25} = (1,39,4,41,3)P_{26} = (1,26,19,44,3)P_{27} = (1,46,24,3,37)$$

$$P_{28} = (1,35,33,42,9)P_{29} = (1,45,12,44,21)P_{30} = (1,4,39,38,33)P_{31} = (1,22,5,43,1)$$

$$P_{32} = (1,3,48,21,44)P_{33} = (1,28,4,39,25)P_{34} = (1,16,1,16,38)P_{35} = (1,20,14,16,38)$$

$$P_{36} = (1,48,15,23,4)P_{37} = (1,15,12,23,8)P_{38} = (1,24,6,2,36)P_{39} = (1,20,43,37,4)$$

$$P_{40} = (1, 7, 1, 9, 25) P_{41} = (1, 1, 22, 17, 35) P_{42} = (1, 23, 14, 39, 46) P_{43} = (1, 2, 31, 19, 45)$$

$$P_{44} = (1, 20, 19, 14, 20) P_{45} = (1, 36, 40, 3, 37) P_{46} = (1, 5, 32, 28, 2) P_{47} = (0, 1, 19, 16, 11)$$

$$P_{48} = (1, 13, 33, 15, 39) P_{49} = (1, 33, 7, 26, 35)$$

Stabilizer of order 8 is generated by:

$$g_1 = \begin{bmatrix} 36 & 0 & 0 & 25 & 28 \\ 0 & 0 & 36 & 0 & 0 \\ 0 & 10 & 0 & 0 & 0 \\ 14 & 0 & 0 & 12 & 19 \\ 37 & 0 & 0 & 12 & 12 \end{bmatrix}_0$$

with 50 fixed points

$$g_2 = \begin{bmatrix} 39 & 47 & 27 & 38 & 45 \\ 33 & 9 & 28 & 48 & 10 \\ 15 & 14 & 47 & 7 & 23 \\ 9 & 27 & 11 & 4 & 31 \\ 38 & 8 & 46 & 13 & 34 \end{bmatrix}_1$$

with 10 fixed points

3.6 Isomorphism Type 5

Stabilizer has order 20
Plane intersection type is $4^{420}\ 3^{17920}$
Plane invariant is too big (420 planes)

$\rightarrow$	5_1	40_5	20_8	10_7	60_9	30_{11}	100_{10}	20_{12}	10_{13}	20_6	40_{15}	40_{16}	10_{14}	10_{17}	5_{18}
20_0	1	6	3	1	6	3	10	2	1	1	2	2	0	0	0
5_3	0	0	0	4	12	6	0	0	0	4	0	0	4	2	0
20_2	0	2	0	0	3	0	10	1	0	2	6	4	1	1	1
5_4	0	0	4	0	0	6	0	4	4	0	0	8	0	2	0

$\downarrow$	5_1	40_5	20_8	10_7	60_9	30_{11}
20_0	4	3	3	2	2	2
5_3	0	0	0	2	1	1
20_2	0	1	0	0	1	0
5_4	0	0	1	0	0	1

$C_0 = \{1, 3, 5, 6, 8, 18, 22, 23, 30, 31, 33, 36, 38, 39, 41, 42, 45, 47, 48, 49\}_{20}$
$C_1 = \{29, 131, 255, 268, 364\}_5$
$C_2 = \{4, 7, 9, 10, 11, 12, 16, 17, 21, 24, 25, 26, 27, 28, 32, 34, 35, 40, 43, 46\}_{20}$
$C_3 = \{2, 13, 20, 29, 37\}_5$
$C_4 = \{0, 14, 15, 19, 44\}_5$
$C_5 = \{11, 37, 41, 68, 85, 88, 91, 97, 99, 102, 108, 139, 145, 150, 152, 195, 197, 200, 205, 211, 213, 234, 237, 243, 248, 259, 263, 292, 295, 297, 302, 30$
$C_6 = \{4, 23, 32, 36, 75, 79, 92, 121, 123, 140, 154, 182, 183, 190, 216, 231, 286, 329, 358, 371\}_{20}$
$C_7 = \{3, 14, 33, 45, 77, 112, 223, 257, 300, 414\}_{10}$
$C_8 = \{9, 15, 26, 42, 49, 56, 74, 93, 157, 174, 185, 187, 209, 264, 325, 334, 349, 360, 393, 404\}_{20}$
$C_9 = \{19, 20, 24, 28, 34, 57, 58, 60, 62, 84, 89, 96, 103, 126, 128, 134, 135, 138, 147, 151, 160, 165, 172, 176, 179, 180, 184, 203, 217, 218, 220, 232, 23$
$C_{10} = \{0, 1, 6, 13, 16, 17, 27, 31, 38, 39, 43, 46, 48, 50, 51, 52, 54, 61, 69, 70, 71, 72, 73, 90, 101, 110, 115, 116, 117, 118, 120, 122, 127, 132, 142, 148,$
$C_{11} = \{10, 12, 40, 55, 59, 80, 81, 82, 109, 113, 119, 136, 143, 167, 208, 210, 215, 219, 251, 275, 280, 311, 313, 317, 336, 342, 356, 378, 407, 409\}_{30}$
$C_{12} = \{7, 66, 83, 104, 105, 107, 130, 168, 175, 192, 194, 241, 249, 271, 277, 324, 346, 372, 376, 390\}_{20}$
$C_{13} = \{5, 35, 163, 169, 186, 269, 326, 351, 370, 397\}_{10}$
$C_{14} = \{25, 44, 111, 162, 247, 267, 316, 322, 340, 389\}_{10}$
$C_{15} = \{18, 47, 53, 63, 64, 78, 87, 94, 95, 124, 133, 137, 144, 196, 199, 202, 224, 236, 239, 240, 250, 253, 283, 290, 293, 294, 299, 304, 319, 320, 327, 33$
$C_{16} = \{8, 21, 22, 65, 67, 86, 98, 100, 106, 129, 141, 146, 177, 178, 191, 198, 201, 222, 226, 229, 233, 245, 260, 266, 272, 281, 285, 306, 307, 309, 312, 3$
$C_{17} = \{2, 30, 125, 166, 189, 221, 308, 310, 314, 353\}_{10}$
$C_{18} = \{76, 114, 284, 338, 419\}_5$

$\rightarrow$	5_1	40_5	20_8	10_7	60_9	30_{11}	100_{10}	20_{12}	10_{13}	20_6	40_{15}	40_{16}	10_{14}	10_{17}	5_{18}
20_0	1	6	3	1	6	3	10	2	1	1	2	2	0	0	0
5_3	0	0	0	4	12	6	0	0	0	4	0	0	4	2	0
20_2	0	2	0	0	3	0	10	1	0	2	6	4	1	1	1
5_4	0	0	4	0	0	6	0	4	4	0	0	8	0	2	0

$\downarrow$	5_1	40_5	20_8	10_7	60_9	30_{11}	100_{10}	20_{12}	10_{13}	20_6	40_{15}	40_{16}	10_{14}	10_{17}	5_{18}
20_0	4	3	3	2	2	2	2	2	2	1	1	1	0	0	0
5_3	0	0	0	2	1	1	0	0	0	1	0	0	2	1	0
20_2	0	1	0	0	1	0	2	1	0	2	3	2	2	2	4
5_4	0	0	1	0	0	1	0	1	2	0	0	1	0	1	0

$C_0 = \{1, 3, 5, 6, 8, 18, 22, 23, 30, 31, 33, 36, 38, 39, 41, 42, 45, 47, 48, 49\}_{20}$
$C_1 = \{48, 217, 280, 331, 375\}_5$
$C_2 = \{4, 7, 9, 10, 11, 12, 16, 17, 21, 24, 25, 26, 27, 28, 32, 34, 35, 40, 43, 46\}_{20}$
$C_3 = \{2, 13, 20, 29, 37\}_5$
$C_4 = \{0, 14, 15, 19, 44\}_5$
$C_5 = \{3, 18, 26, 27, 34, 35, 62, 110, 112, 128, 144, 162, 172, 180, 187, 196, 200, 214, 221, 228, 231, 244, 248, 249, 270, 272, 290, 295, 298, 300, 324, 3$
$C_6 = \{31, 55, 80, 105, 118, 147, 197, 205, 233, 255, 268, 275, 284, 305, 308, 326, 330, 334, 341, 369\}_{20}$
$C_7 = \{43, 52, 141, 170, 179, 215, 307, 320, 329, 342\}_{10}$
$C_8 = \{12, 49, 54, 107, 119, 125, 166, 169, 174, 259, 294, 309, 317, 319, 323, 353, 358, 378, 382, 392\}_{20}$
$C_9 = \{4, 6, 7, 15, 22, 28, 42, 63, 66, 75, 93, 96, 100, 101, 120, 122, 126, 131, 153, 155, 156, 164, 178, 184, 188, 203, 204, 211, 219, 223, 224, 230, 238, 2$
$C_{10} = \{0, 1, 5, 8, 13, 16, 25, 29, 30, 36, 37, 38, 39, 46, 58, 59, 60, 68, 69, 73, 74, 76, 82, 86, 89, 90, 91, 94, 95, 103, 109, 111, 124, 130, 132, 134, 136, 13$
$C_{11} = \{11, 40, 45, 53, 85, 97, 106, 108, 123, 149, 154, 157, 173, 191, 209, 239, 274, 277, 286, 288, 289, 303, 304, 325, 339, 348, 350, 389, 400, 402\}_{30}$
$C_{12} = \{64, 65, 98, 116, 121, 133, 145, 151, 175, 185, 208, 210, 225, 250, 263, 302, 366, 368, 384, 393\}_{20}$
$C_{13} = \{57, 77, 92, 193, 253, 262, 327, 340, 370, 391\}_{10}$
$C_{14} = \{2, 17, 83, 99, 142, 212, 321, 332, 359, 398\}_{10}$
$C_{15} = \{9, 19, 20, 24, 41, 44, 67, 70, 78, 79, 113, 115, 129, 148, 152, 186, 198, 202, 218, 220, 226, 227, 229, 246, 276, 279, 283, 293, 306, 315, 356, 361,$
$C_{16} = \{10, 23, 32, 33, 47, 50, 51, 56, 61, 71, 81, 87, 102, 104, 114, 117, 127, 146, 167, 168, 181, 182, 189, 206, 213, 222, 232, 247, 258, 281, 299, 314, 3$
$C_{17} = \{14, 72, 135, 163, 237, 264, 380, 399, 403, 405\}_{10}$
$C_{18} = \{21, 84, 88, 140, 150\}_5$
Column cell 1:
Column cell 5:
Column cell 6:
Column cell 7:
Column cell 8:
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:
Order of the group that is induced on the object is 20
Number of ancestors on 5-sets is 106090.
Number of orbits on 5-sets is 106090.
With 4 orbits on the object
Orbit lengths: $5^2,\ 20^2$
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	13	19626	26	82016	39	117112
1	1	14	117632	27	565	40	62932
2	484	15	46391	28	19840	41	55413
3	485	16	959	29	118218	42	27340
4	538	17	48924	30	21189	43	16151
5	15395	18	43119	31	69236	44	71984
6	2284	19	112535	32	111420	45	68029
7	69876	20	41938	33	19551	46	1371
8	82072	21	94151	34	44116	47	116716
9	113168	22	18075	35	66937	48	97213
10	34748	23	51627	36	55316	49	1236
11	27385	24	91312	37	12130		
12	39540	25	70220	38	62243		

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,37,6,37)P_3 = (0,1,25,3,43)$$

$$P_4 = (0,1,14,37,15)P_5 = (1,29,12,47,4)P_6 = (0,1,43,28,27)P_7 = (1,24,36,47,9)$$

$$P_8 = (1,6,42,15,12)P_9 = (1,21,45,36,29)P_{10} = (1,19,18,2,27)P_{11} = (1,45,48,46,19)$$

$$P_{12} = (1,32,36,42,14)P_{13} = (1,29,40,20,2)P_{14} = (1,48,45,42,30)P_{15} = (1,42,23,6,17)$$

$$P_{16} = (0,1,48,32,2)P_{17} = (1,21,26,19,16)P_{18} = (1,10,32,1,13)P_{19} = (1,22,23,25,29)$$

$$P_{20} = (1,41,28,19,13)P_{21} = (1,14,23,9,42)P_{22} = (1,10,44,47,5)P_{23} = (1,36,44,22,41)$$

$$P_{24} = (1,41,14,44,33)P_{25} = (1,22,18,35,9)P_{26} = (1,8,45,47,12)P_{27} = (0,1,48,48,6)$$

$$P_{28} = (1,45,14,35,2)P_{29} = (1,3,40,34,22)P_{30} = (1,12,41,18,3)P_{31} = (1,27,16,38,9)$$

$$P_{32} = (1,34,26,5,29)P_{33} = (1,33,32,17,2)P_{34} = (1,16,1,16,38)P_{35} = (1,36,48,30,21)$$

$$P_{36} = (1,23,16,27,23)P_{37} = (1,2,28,48,1)P_{38} = (1,2,12,45,20)P_{39} = (1,46,42,26,30)$$

$$P_{40} = (1,32,1,5,20)P_{41} = (1,17,41,43,23)P_{42} = (1,2,21,4,19)P_{43} = (1,25,23,15,4)$$

$$P_{44} = (1,12,45,41,11)P_{45} = (1,37,46,35,21)P_{46} = (0,1,43,12,33)P_{47} = (1,20,21,48,30)$$

$$P_{48} = (1,14,46,13,15)P_{49} = (0,1,24,20,28)$$

Stabilizer of order 20 is generated by:

$$g_1 = \begin{bmatrix} 25 & 0 & 0 & 0 & 0 \\ 0 & 25 & 0 & 0 & 0 \\ 0 & 1 & 25 & 3 & 43 \\ 0 & 43 & 0 & 31 & 0 \\ 0 & 3 & 0 & 0 & 31 \end{bmatrix}_0$$

with 52 fixed points

$$g_2 = \begin{bmatrix} 12 & 0 & 0 & 0 & 0 \\ 0 & 14 & 0 & 0 & 0 \\ 0 & 20 & 8 & 34 & 9 \\ 0 & 32 & 0 & 0 & 37 \\ 0 & 3 & 0 & 19 & 0 \end{bmatrix}_1$$

with 8 fixed points

$$g_3 = \begin{bmatrix} 0 & 31 & 40 & 34 & 34 \\ 48 & 26 & 43 & 18 & 31 \\ 19 & 16 & 26 & 24 & 13 \\ 17 & 13 & 31 & 4 & 29 \\ 17 & 24 & 18 & 32 & 4 \end{bmatrix}_0$$

with 52 fixed points

3.7 Isomorphism Type 6

Stabilizer has order 8
Plane intersection type is $5^8\ 4^{356}\ 3^{18096}$
Plane invariant is

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

$\rightarrow$	8_1
8_0	2
24_2	1
18_3	0

$\downarrow$	8_1
8_0	2
24_2	3
18_3	0

$C_0 = \{4, 6, 7, 16, 19, 26, 31, 46\}_8$
$C_1 = \{0, 1, 2, 3, 4, 5, 6, 7\}_8$
$C_2 = \{5, 9, 10, 11, 12, 13, 15, 17, 18, 20, 21, 22, 24, 28, 29, 32, 35, 36, 37, 41, 42, 43, 44, 48\}_{24}$
$C_3 = \{0, 1, 2, 3, 8, 14, 23, 25, 27, 30, 33, 34, 38, 39, 40, 45, 47, 49\}_{18}$

$\rightarrow$	8_1	8_2	8_9	8_{42}	8_{10}	8_{11}	4_{12}	8_{13}	8_8	8_{16}	16_{15}	8_{18}	8_{19}	16_{20}	8_{17}	16_{21}	8_{22}	4_{14}	16_{24}	4_{25}	4_{26}	16_{23}	8_{29}	16_{43}
8_0	2	2	2	2	2	2	1	2	1	1	2	1	1	2	1	2	1	0	0	0	0	0	0	0
8_3	1	2	1	1	0	0	0	0	2	2	2	1	1	2	0	0	0	1	4	1	1	2	1	2
8_5	1	0	0	0	1	0	0	0	0	0	2	0	0	0	2	2	0	1	2	0	0	2	1	2
8_6	1	0	0	0	0	1	0	0	1	0	0	2	1	0	0	2	0	0	0	1	0	4	1	2
2_4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0
8_7	0	0	1	0	1	0	0	0	0	1	2	0	0	2	0	0	3	0	2	0	0	0	1	0
8_{41}	0	0	0	1	0	1	0	2	0	0	0	0	1	2	1	2	0	0	0	0	0	0	0	2

$\downarrow$	8_1	8_2	8_9	8_{42}	8_{10}	8_{11}	4_{12}	8_{13}	8_8	8_{16}	16_{15}	8_{18}	8_{19}	16_{20}	8_{17}	16_{21}	8_{22}	4_{14}	16_{24}	4_{25}	4_{26}	16_{23}	8_{29}	16_{43}
8_0	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
8_3	1	2	1	1	0	0	0	0	2	2	1	1	1	1	0	0	0	2	2	2	2	1	1	1
8_5	1	0	0	0	1	0	0	0	0	0	1	0	0	0	2	1	0	2	1	0	0	1	1	1
8_6	1	0	0	0	0	1	0	0	1	0	0	2	1	0	0	1	0	0	0	2	0	2	1	1
2_4	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
8_7	0	0	1	0	1	0	0	0	0	1	1	0	0	1	0	0	3	0	1	0	0	0	1	0
8_{41}	0	0	0	1	0	1	0	2	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	1

$C_0 = \{4, 6, 7, 16, 19, 26, 31, 46\}_8$
$C_1 = \{41, 81, 85, 257, 259, 272, 298, 335\}_8$
$C_2 = \{10, 22, 49, 50, 152, 224, 248, 284\}_8$
$C_3 = \{5, 9, 10, 12, 13, 20, 35, 37\}_8$
$C_4 = \{0, 2\}_2$
$C_5 = \{15, 17, 18, 22, 29, 36, 42, 43\}_8$
$C_6 = \{11, 21, 24, 28, 32, 41, 44, 48\}_8$
$C_7 = \{1, 3, 25, 30, 33, 40, 47, 49\}_8$
$C_8 = \{163, 213, 218, 289, 303, 333, 337, 357\}_8$
$C_9 = \{26, 37, 54, 58, 217, 219, 302, 305\}_8$
$C_{10} = \{165, 185, 197, 205, 230, 255, 269, 271\}_8$
$C_{11} = \{71, 89, 111, 140, 282, 291, 323, 348\}_8$
$C_{12} = \{84, 160, 265, 363\}_4$
$C_{13} = \{0, 32, 94, 119, 162, 315, 316, 346\}_8$
$C_{14} = \{175, 215, 290, 310\}_4$
$C_{15} = \{33, 39, 60, 83, 105, 153, 181, 183, 200, 222, 241, 249, 258, 273, 311, 360\}_{16}$
$C_{16} = \{8, 64, 90, 91, 155, 212, 225, 304\}_8$
$C_{17} = \{2, 48, 143, 156, 174, 253, 285, 286\}_8$
$C_{18} = \{139, 208, 209, 221, 231, 247, 314, 342\}_8$

$C_{19} = \{23, 34, 69, 171, 172, 277, 324, 353\}_8$
$C_{20} = \{1, 19, 24, 43, 66, 78, 86, 98, 108, 176, 229, 238, 240, 329, 339, 354\}_{16}$
$C_{21} = \{21, 31, 42, 56, 74, 75, 80, 186, 188, 268, 280, 300, 301, 343, 344, 350\}_{16}$
$C_{22} = \{46, 198, 210, 261, 262, 312, 345, 356\}_8$
$C_{23} = \{9, 14, 15, 16, 17, 97, 118, 141, 159, 164, 194, 246, 276, 297, 299, 319\}_{16}$
$C_{24} = \{3, 30, 38, 55, 87, 110, 120, 132, 134, 180, 196, 201, 227, 307, 317, 330\}_{16}$
$C_{25} = \{13, 267, 325, 340\}_4$
$C_{26} = \{99, 126, 206, 313\}_4$
$C_{27} = \{68, 127, 129, 150, 151, 193, 226, 245\}_8$
$C_{28} = \{12, 44, 70, 72, 92, 106, 109, 130, 161, 169, 195, 242, 263, 278, 287, 349\}_{16}$
$C_{29} = \{40, 47, 95, 114, 115, 237, 281, 288\}_8$
$C_{30} = \{100, 121, 133, 146, 157, 158, 178, 179\}_8$
$C_{31} = \{5, 35, 52, 59, 135, 145, 260, 358\}_8$
$C_{32} = \{4, 62, 73, 88, 191, 293, 332, 351\}_8$
$C_{33} = \{18, 20, 63, 113\}_4$
$C_{34} = \{67, 125, 137, 144, 204, 250, 256, 309\}_8$
$C_{35} = \{136, 147, 235, 347\}_4$
$C_{36} = \{27, 122, 138, 264\}_4$
$C_{37} = \{112, 123, 173, 243, 306, 320, 327, 328\}_8$
$C_{38} = \{25, 28, 45, 65, 103, 199, 270, 275\}_8$
$C_{39} = \{79, 326, 334, 362\}_4$
$C_{40} = \{148, 149, 211, 216, 228, 234, 236, 252\}_8$
$C_{41} = \{8, 14, 23, 27, 34, 38, 39, 45\}_8$
$C_{42} = \{7, 82, 128, 168, 202, 251, 321, 336\}_8$
$C_{43} = \{36, 77, 101, 104, 116, 117, 142, 170, 189, 190, 239, 254, 294, 308, 352, 359\}_{16}$
$C_{44} = \{124, 166, 177, 214, 244, 279, 341, 361\}_8$
$C_{45} = \{61, 96, 223, 232, 266, 292, 331, 355\}_8$
$C_{46} = \{6, 29, 51, 76, 154, 167, 318, 338\}_8$
$C_{47} = \{11, 53, 93, 102, 107, 184, 187, 283\}_8$
$C_{48} = \{57, 131, 192, 203, 207, 233, 295, 322\}_8$
$C_{49} = \{182, 220, 274, 296\}_4$
Column cell 1:
Column cell 2:
Column cell 8:
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:
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Column cell 19:
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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:
Column cell 39:
Column cell 40:
Column cell 42:
Column cell 43:
Column cell 44:
Column cell 45:
Column cell 46:
Column cell 47:
Column cell 48:
Column cell 49:
Order of the group that is induced on the object is 8
Number of ancestors on 5-sets is 264920.
Number of orbits on 5-sets is 264920.
With 7 orbits on the object
Orbit lengths: $2,\ 8^6$
The points by ranks:

i	Rank
0	0
1	1
2	484
3	485
4	538
5	18900
6	12809
7	65727
8	83500
9	110012
10	64722
11	78399
12	80282

i	Rank
13	66754
14	61235
15	65621
16	959
17	84360
18	94063
19	84767
20	39772
21	101663
22	90152
23	74715
24	81412
25	38580

i	Rank
26	84543
27	44929
28	95622
29	31707
30	73509
31	36309
32	75302
33	44866
34	49033
35	119672
36	70790
37	56741
38	25666

i	Rank
39	38389
40	74716
41	88337
42	56753
43	85283
44	26455
45	57565
46	80783
47	70058
48	91737
49	83609

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,37,6,37)P_3 = (0,1,25,3,43)$$

$$P_4 = (0,1,14,37,15)P_5 = (1,16,36,24,2)P_6 = (1,25,15,34,1)P_7 = (1,15,32,6,44)$$

$$P_8 = (1,47,21,34,12)P_9 = (1,28,18,16,24)P_{10} = (1,32,38,28,44)P_{11} = (1,11,32,33,47)$$

$$P_{12} = (1,37,20,40,28)P_{13} = (1,41,28,16,21)P_{14} = (1,23,12,38,48)P_{15} = (1,40,4,47,44)$$

$$P_{16} = (0,1,48,32,2)P_{17} = (1,47,25,30,36)P_{18} = (1,20,31,34,42)P_{19} = (1,3,24,37,36)$$

$$P_{20} = (1,9,21,12,14)P_{21} = (1,9,24,15,39)P_{22} = (1,28,3,40,43)P_{23} = (1,9,44,2,31)$$

$$P_{24} = (1,48,1,2,28)P_{25} = (1,7,36,46,32)P_{26} = (1,29,32,17,36)P_{27} = (1,7,10,47,38)$$

$$P_{28} = (1,24,5,23,15)P_{29} = (1,2,44,12,26)P_{30} = (1,28,41,31,31)P_{31} = (1,44,41,39,27)$$

$$P_{32} = (1,41,43,39,45)P_{33} = (1,38,28,13,38)P_{34} = (1,4,48,41,16)P_{35} = (1,34,3,11,22)$$

$$P_{36} = (1,41,43,17,11)P_{37} = (1,39,4,18,23)P_{38} = (1,2,28,38,19)P_{39} = (1,15,8,14,32)$$

$$P_{40} = (1,2,21,2,31)P_{41} = (1,20,13,40,8)P_{42} = (1,20,13,18,23)P_{43} = (1,4,12,48,36)$$

$$P_{44} = (1,40,2,2,19)P_{45} = (1,8,46,39,25)P_{46} = (1,38,24,6,28)P_{47} = (1,19,20,13,9)$$

$$P_{48} = (1,28,6,37,33)P_{49} = (1,28,15,26,12)$$

Stabilizer of order 8 is generated by:

$$g_1 = \begin{bmatrix} 16 & 0 & 0 & 0 & 0 \\ 0 & 40 & 0 & 0 & 0 \\ 0 & 18 & 40 & 47 & 24 \\ 0 & 24 & 0 & 16 & 0 \\ 0 & 47 & 0 & 0 & 16 \end{bmatrix}_0$$

with 52 fixed points

$$g_2 = \begin{bmatrix} 41 & 25 & 0 & 25 & 38 \\ 0 & 35 & 0 & 0 & 0 \\ 37 & 3 & 14 & 9 & 9 \\ 47 & 30 & 0 & 28 & 22 \\ 37 & 28 & 0 & 32 & 28 \end{bmatrix}_0$$

with 4 fixed points

$$g_3 = \begin{bmatrix} 35 & 27 & 0 & 3 & 24 \\ 0 & 31 & 4 & 25 & 4 \\ 8 & 46 & 21 & 35 & 6 \\ 14 & 46 & 4 & 11 & 18 \\ 33 & 24 & 28 & 29 & 35 \end{bmatrix}_1$$

with 2 fixed points

3.8 Isomorphism Type 7

Stabilizer has order 200
Plane intersection type is $5^{10}\ 4^{350}\ 3^{18100}$
Plane invariant is too big (10 planes)

$\rightarrow$	10_1
50_0	1

$\downarrow$	10_1
50_0	5

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

$\rightarrow$	10_1	350_2
50_0	1	28

$\downarrow$	10_1	350_2
50_0	5	4

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,$
$C_1 = \{24, 53, 67, 85, 86, 101, 123, 229, 236, 304\}_{10}$
$C_2 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43,$
Column cell 1:
Column cell 2:
Order of the group that is induced on the object is 200
Number of ancestors on 5-sets is 119236.
Number of orbits on 5-sets is 10669.
With 1 orbits on the object
Orbit lengths: 50
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	13	61259	26	80399	39	92802
1	1	14	80283	27	88349	40	21714
2	484	15	25170	28	32444	41	63193
3	490	16	1655	29	73737	42	58441
4	535	17	43950	30	75986	43	31507
5	31028	18	29573	31	113073	44	21130
6	89668	19	36295	32	26330	45	31504
7	26817	20	28947	33	88164	46	97343
8	42457	21	44188	34	62344	47	68043
9	60352	22	48664	35	98277	48	38670
10	62904	23	30911	36	14827	49	12065
11	75704	24	33273	37	12053		
12	69081	25	39881	38	96058		

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,37,6,37)P_3 = (0,1,16,37,29)$$

$$P_4 = (0,1,39,5,44)P_5 = (1,15,16,6,26)P_6 = (1,25,1,17,43)P_7 = (1,7,47,47,19)$$

$$P_8 = (1,20,48,31,13)P_9 = (1,29,14,8,48)P_{10} = (1,6,25,21,20)P_{11} = (1,24,3,42,45)$$

$$P_{12} = (1,37,6,9,9)P_{13} = (1,5,34,16,48)P_{14} = (1,5,44,40,28)P_{15} = (1,8,38,45,6)$$

$$P_{16} = (0,1,7,33,8)P_{17} = (1,21,11,42,38)P_{18} = (1,35,4,10,34)P_{19} = (1,24,2,39,27)$$

$$P_{20} = (1,47,22,39,34)P_{21} = (1,15,21,1,38)P_{22} = (1,23,42,38,16)P_{23} = (1,18,24,26,26)$$

$$P_{24} = (1,31,6,29,46)P_{25} = (1,25,15,45,14)P_{26} = (1,30,24,34,28)P_{27} = (1,40,9,40,8)$$

$$P_{28} = (1,34,18,14,46)P_{29} = (1,34,6,8,31)P_{30} = (1,37,30,14,45)P_{31} = (1,12,47,21,29)$$

$$P_{32} = (1,8,20,23,19)P_{33} = (1,14,36,24,8)P_{34} = (1,29,42,6,20)P_{35} = (1,17,41,18,40)$$

$$P_{36} = (1,15,39,22,4)P_{37} = (1,19,4,42,1)P_{38} = (1,36,19,46,15)P_{39} = (1,42,38,25,33)$$

$$P_{40} = (1,14,38,33,3)P_{41} = (1,41,48,11,20)P_{42} = (1,3,48,8,25)P_{43} = (1,47,17,41,26)$$

$$P_{44} = (1,11,19,16,3)P_{45} = (1,6,14,41,26)P_{46} = (1,41,24,35,15)P_{47} = (1,1,44,35,21)$$

$$P_{48} = (1,8,11,29,32)P_{49} = (1,1,13,42,1)$$

Stabilizer of order 200 is generated by:

$$g_1 = \begin{bmatrix} 33 & 2 & 0 & 6 & 3 \\ 0 & 4 & 0 & 0 & 0 \\ 1 & 35 & 4 & 10 & 34 \\ 5 & 34 & 0 & 41 & 47 \\ 3 & 10 & 0 & 27 & 41 \end{bmatrix}_0$$

with 52 fixed points

$$g_2 = \begin{bmatrix} 33 & 21 & 0 & 36 & 11 \\ 0 & 23 & 0 & 0 & 0 \\ 7 & 12 & 4 & 42 & 48 \\ 17 & 42 & 0 & 41 & 10 \\ 22 & 46 & 0 & 18 & 3 \end{bmatrix}_1$$

with 8 fixed points

$$g_3 = \begin{bmatrix} 47 & 0 & 0 & 0 & 0 \\ 0 & 43 & 38 & 13 & 38 \\ 0 & 30 & 43 & 21 & 3 \\ 0 & 3 & 38 & 13 & 13 \\ 0 & 21 & 13 & 28 & 13 \end{bmatrix}_0$$

with 50 fixed points

$$g_4 = \begin{bmatrix} 11 & 0 & 0 & 37 & 43 \\ 0 & 0 & 44 & 0 & 0 \\ 0 & 48 & 0 & 0 & 0 \\ 25 & 0 & 0 & 21 & 40 \\ 43 & 0 & 0 & 48 & 21 \end{bmatrix}_0$$

with 52 fixed points

Chapter 4

The BLT-Sets in Numeric Form

0, 1, 484, 485, 486, 490, 509, 511, 521, 512, 498, 488, 526, 508, 487, 489, 505, 492, 499, 528, 494, 522, 515, 530, 518, 497, 525, 504, 491, 519, 513, 527, 506, 520, 493, 507, 500, 514, 501, 529, 523, 502, 516, 495, 524, 503, 517, 531, 496, 510
0, 1, 484, 485, 486, 490, 509, 511, 521, 512, 498, 488, 39149, 76296, 15707, 525, 73078, 518, 491, 32860, 513, 33646, 34726, 506, 85935, 499, 528, 75617, 507, 43725, 514, 46212, 34701, 119160, 92703, 501, 88781, 68956, 42670, 22316, 516, 46841, 495, 62924, 119483, 503, 103241, 79278, 73361, 56718
0, 1, 484, 485, 486, 787, 1730, 1798, 1325, 1822, 803, 1692, 779, 811, 819, 795, 2196, 1340, 1220, 2253, 1804, 2173, 2246, 1701, 1237, 2199, 1247, 1710, 2239, 1310, 2183, 1344, 2232, 487, 1712, 1215, 1816, 2209, 1225, 488, 1329, 1792, 1721, 2225, 2186, 489, 1810, 2218, 1242, 1314
0, 1, 484, 485, 538, 12621, 89995, 47533, 37786, 55341, 91922, 30148, 34998, 38489, 17614, 51183, 959, 119580, 91919, 20325, 109111, 66691, 110697, 91312, 105436, 52075, 104676, 15945, 14737, 87248, 22696, 35897, 18285, 60196, 77042, 18346, 118856, 51180, 32457, 112954, 34053, 46438, 56117, 98269, 25108, 40922, 27235, 117361, 63970, 56718
0, 1, 484, 485, 538, 14856, 86512, 60216, 83809, 67488, 115082, 12567, 20555, 14317, 33281, 41427, 22364, 114360, 75347, 53173, 80500, 42773, 37913, 66855, 27119, 22901, 21802, 106319, 69351, 67475, 92875, 12342, 65209, 57557, 44116, 44128, 14969, 88211, 85497, 14630, 57220, 107619, 33232, 75247, 63274, 106314, 20511, 1242, 101655, 107302
0, 1, 484, 485, 538, 15395, 2284, 69876, 82072, 113168, 34748, 27385, 39540, 19626, 117632, 46391, 959, 48924, 43119, 112535, 41938, 94151, 18075, 51627, 91312, 70220, 82016, 565, 19840, 118218, 21189, 69236, 111420, 19551, 44116, 66937, 55316, 12130, 62243, 117112, 62932, 55413, 27340, 16151, 71984, 68029, 1371, 116716, 97213, 1236
0, 1, 484, 485, 538, 18900, 12809, 65727, 83500, 110012, 64722, 78399, 80282, 66754, 61235, 65621, 959, 84360, 94063, 84767, 39772, 101663, 90152, 74715, 81412, 38580, 84543, 44929, 95622, 31707, 73509, 36309, 75302, 44866, 49033, 119672, 70790, 56741, 25666, 38389, 74716, 88337, 56753, 85283, 26455, 57565, 80783, 70058, 91737, 83609
0, 1, 484, 490, 535, 31028, 89668, 26817, 42457, 60352, 62904, 75704, 69081, 61259, 80283, 25170, 1655, 43950, 29573, 36295, 28947, 44188, 48664, 30911, 33273, 39881, 80399, 88349, 32444, 73737, 75986, 113073, 26330, 88164, 62344, 98277, 14827, 12053, 96058, 92802, 21714, 63193, 58441, 31507, 21130, 31504, 97343, 68043, 38670, 12065

```
INT BLT_49_size = 50;
INT BLT_49_nb_reps = 8;
INT BLT_49_reps[] = {
0, 1, 484, 485, 486, 490, 509, 511, 521, 512, 498, 488, 526, 508, 487, 489, 505, 492, 499, 528, 494, 522, 515, 530
0, 1, 484, 485, 486, 490, 509, 511, 521, 512, 498, 488, 39149, 76296, 15707, 525, 73078, 518, 491, 32860, 513, 336
0, 1, 484, 485, 486, 787, 1730, 1798, 1325, 1822, 803, 1692, 779, 811, 819, 795, 2196, 1340, 1220, 2253, 1804, 217
0, 1, 484, 485, 538, 12621, 89995, 47533, 37786, 55341, 91922, 30148, 34998, 38489, 17614, 51183, 959, 119580, 919
0, 1, 484, 485, 538, 14856, 86512, 60216, 83809, 67488, 115082, 12567, 20555, 14317, 33281, 41427, 22364, 114360,
0, 1, 484, 485, 538, 15395, 2284, 69876, 82072, 113168, 34748, 27385, 39540, 19626, 117632, 46391, 959, 48924, 431
0, 1, 484, 485, 538, 18900, 12809, 65727, 83500, 110012, 64722, 78399, 80282, 66754, 61235, 65621, 959, 84360, 940
0, 1, 484, 490, 535, 31028, 89668, 26817, 42457, 60352, 62904, 75704, 69081, 61259, 80283, 25170, 1655, 43950, 295
};
const BYTE *BLT_49_stab_order[] = {
"23520000",
"10000",
"940800",
"40",
"8",
"20",
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```
"8",
"200",
};
INT BLT_49_stab_gens[] = {
45,  0,  0,  0,  0,  0, 11,  0,  0,  0,  0,  0, 11,  0,  0,  0,  0,  0, 11,  0,  0,  0,  0,  0, 11, 0,
25,  0,  0,  0,  0,  0, 41,  0,  0,  0,  0,  0, 10,  0,  0,  0,  0,  0, 41,  0,  0,  0,  0,  0, 10, 1,
46,  0,  0,  0,  0,  0, 13,  0,  0,  0,  0,  0, 35,  0,  0,  0,  0,  0, 25,  0,  0,  0,  0,  0, 28, 1,
43,  0,  0,  0,  0,  0, 27,  0,  0,  0,  0,  0,  2,  0,  0,  0,  0,  0, 13,  0,  0,  0,  0,  0, 13, 0,
 8,  0,  0, 30, 21,  0,  5,  0,  0,  0,  0,  0,  5,  0,  0, 35,  0,  0, 23, 47, 15,  0,  0,  2, 23, 0,
32,  0,  0, 24, 38,  0,  7,  0,  0,  0,  0,  0, 34,  0,  0, 14,  0,  0, 29, 10, 41,  0,  0, 23,  2, 1,
39,  0,  0, 40, 47,  0,  7,  0,  0,  0,  0, 41, 34, 26, 39, 42, 21,  0, 30,  5, 11, 26,  0,  1, 36, 1,
44,  0,  0,  0,  0,  0, 44,  0,  0,  0,  0, 23, 44, 20, 39,  0, 39,  0, 12,  0,  0, 20,  0,  0, 12, 0,
35,  0,  0, 33, 32,  0,  0, 46,  0,  0,  0, 20,  0,  0,  0,  1,  0,  0, 14, 43, 42,  0,  0, 31, 12, 1,
31,  0,  0,  1, 37,  0,  8, 36, 48, 36,  0,  0,  8,  0,  0, 43,  0, 36, 12, 17,  4,  0, 48, 48, 12, 0,
11,  0,  0, 43, 38,  0, 24,  0,  0,  0,  0,  0, 24,  0,  0,  9,  0,  0, 14, 44, 31,  0,  0, 32, 14, 0,
18,  0,  0, 35,  2,  0, 17,  0,  0,  0,  0,  0, 17,  0,  0,  1,  0,  0,  3,  2, 42,  0,  0, 15,  3, 0,
 8,  0,  0, 22, 10,  0, 11,  0,  0,  0,  0, 24, 11, 19,  5, 19, 34,  0, 22, 39,  6, 23,  0, 12, 24, 1,
35,  0,  0, 34, 15,  0, 20, 34, 10, 44,  0, 48, 20,  8, 20, 45, 20, 44, 16, 28, 39,  8, 10, 44, 16, 0,
17,  0,  0, 40, 47,  0, 18, 34,  5, 28,  0,  7,  0,  0,  0, 42, 25,  0, 19, 17, 11,  5,  0, 44, 35, 1,
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33,  0,  0,  0,  0,  0, 23,  0,  0,  0,  0,  0, 23,  0,  0,  0,  0,  0, 23,  0,  0,  0,  0,  0, 23, 0,
44,  0,  0,  0,  0,  0,  9,  0,  0,  0,  0,  0,  4,  0,  0,  0,  0,  0,  9,  0,  0,  0,  0,  0,  4, 1,
40,  0,  0,  0,  0,  0, 16,  0,  0,  0,  0,  0, 16,  0,  0,  0,  0,  0, 40,  0,  0,  0,  0,  0, 40, 0,
37,  0,  0,  0,  0,  0, 31,  0,  0,  0,  0,  0, 13,  0,  0,  0,  0,  0, 19,  0,  0,  0,  0,  0, 19, 0,
22,  0,  0,  0,  0,  0, 26,  0,  0,  0,  0,  0, 36,  0,  0,  0,  0,  0, 13,  0,  0,  0,  0,  0, 43, 1,
39,  0,  0,  0,  0,  0, 39,  0,  0,  0,  0,  0, 39,  0,  0,  0,  0,  0,  0, 11,  0,  0,  0, 20,  0, 0,
18,  0,  0,  0,  0,  0, 21,  0,  0,  0,  0, 11, 39, 15, 12,  0, 14,  0, 28,  0,  0, 15,  0,  0, 17, 1,
39,  0,  0,  0,  0,  0, 38,  0,  0,  0,  0, 25,  6, 19,  5,  0, 29,  0, 38,  0,  0, 37,  0,  0,  6, 1,
12,  0,  0,  0,  0,  0,  0, 41,  0,  0,  0, 36, 44, 23, 34,  0,  0, 11,  0, 26,  0,  0, 39, 46,  0, 0,
21,  0,  0,  0,  0,  0, 21,  1, 14,  2,  0, 15, 35, 41, 35,  0, 42,  4,  7,  4,  0, 45, 28, 30,  7, 0,
12,  0,  0,  0,  0,  0, 44,  0,  0,  0,  0, 23, 44, 20, 39,  0, 39,  0, 12,  0,  0, 20,  0,  0, 12, 0,
46, 20,  0, 24, 27,  0, 32,  0,  0,  0, 10, 47, 24,  7, 23, 38, 31,  0, 12, 42, 40, 25,  0, 43, 12, 0,
29, 46,  0, 12, 28,  0, 32, 18, 24, 18,  4, 27, 13, 43,  6, 44, 10, 18, 22, 29, 42, 24, 43, 27,  7, 1,
18, 13, 10, 46,  9,  4, 37, 47,  2, 39,  0, 45,  7, 34,  3, 30, 30, 10, 10, 22, 11,  2, 26,  6,  9, 1,
36,  0,  0, 25, 28,  0,  0, 36,  0,  0,  0, 10,  0,  0,  0, 14,  0,  0, 12, 19, 37,  0,  0, 12, 12, 0,
39, 47, 27, 38, 45, 33,  9, 28, 48, 10, 15, 14, 47,  7, 23,  9, 27, 11,  4, 31, 38,  8, 46, 13, 34, 1,
25,  0,  0,  0,  0,  0, 25,  0,  0,  0,  0,  1, 25,  3, 43,  0, 43,  0, 31,  0,  0,  3,  0,  0, 31, 0,
12,  0,  0,  0,  0,  0, 14,  0,  0,  0,  0, 20,  8, 34,  9,  0, 32,  0,  0, 37,  0,  3,  0, 19,  0, 1,
 0, 31, 40, 34, 34, 48, 26, 43, 18, 31, 19, 16, 26, 24, 13, 17, 13, 31,  4, 29, 17, 24, 18, 32,  4, 0,
16,  0,  0,  0,  0,  0, 40,  0,  0,  0,  0, 18, 40, 47, 24,  0, 24,  0, 16,  0,  0, 47,  0,  0, 16, 0,
41, 25,  0, 25, 38,  0, 35,  0,  0,  0, 37,  3, 14,  9,  9, 47, 30,  0, 28, 22, 37, 28,  0, 32, 28, 0,
35, 27,  0,  3, 24,  0, 31,  4, 25,  4,  8, 46, 21, 35,  6, 14, 46,  4, 11, 18, 33, 24, 28, 29, 35, 1,
33,  2,  0,  6,  3,  0,  4,  0,  0,  0,  1, 35,  4, 10, 34,  5, 34,  0, 41, 47,  3, 10,  0, 27, 41, 0,
33, 21,  0, 36, 11,  0, 23,  0,  0,  0,  7, 12,  4, 42, 48, 17, 42,  0, 41, 10, 22, 46,  0, 18,  3, 1,
47,  0,  0,  0,  0,  0, 43, 38, 13, 38,  0, 30, 43, 21,  3,  0,  3, 38, 13, 13,  0, 21, 13, 28, 13, 0,
11,  0,  0, 37, 43,  0,  0, 44,  0,  0,  0, 48,  0,  0,  0, 25,  0,  0, 21, 40, 43,  0,  0, 48, 21, 0,
};
INT BLT_49_stab_gens_fst[] = { 0, 10, 16, 26, 30, 32, 35, 38};
INT BLT_49_stab_gens_len[] = { 10, 6, 10, 4, 2, 3, 3, 4};
INT BLT_49_make_element_size = 0;
```