BLT-sets of Q(4, 25)

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There are 6 BLT-sets.

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The BLT-Sets

3.1 Isomorphism Type 0

Stabilizer has order 1622400
Plane intersection type is 26
Plane invariant is

$$\begin{bmatrix} 26 \end{bmatrix}$$

$\rightarrow$	1_1
26_0	1

$\downarrow$	1_1
26_0	26

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25\}_{26}$
$C_1 = \{0\}_1$

$\rightarrow$	1_1
26_0	1

$\downarrow$	1_1
26_0	26

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25\}_{26}$
$C_1 = \{0\}_1$
Column cell 1:
Order of the group that is induced on the object is 31200
Number of ancestors on 5-sets is 7.
Number of orbits on 5-sets is 7.
With 1 orbits on the object
Orbit lengths: 26
The points by ranks:

i	Rank
0	0
1	1
2	196
3	197
4	198
5	199
6	205

i	Rank
7	212
8	215
9	207
10	214
11	204
12	206
13	200

i	Rank
14	210
15	216
16	201
17	211
18	217
19	202
20	203

i	Rank
21	213
22	208
23	218
24	209
25	219

The points:

$$P_0 = (0, 1, 0, 0, 0) P_1 = (0, 0, 1, 0, 0) P_2 = (0, 1, 17, 4, 17) P_3 = (0, 1, 13, 2, 21)$$

$$P_4 = (0, 1, 13, 3, 9) P_5 = (0, 1, 17, 1, 13) P_6 = (0, 1, 14, 21, 12) P_7 = (0, 1, 20, 5, 1)$$

$$P_8 = (0, 1, 16, 13, 6) P_9 = (0, 1, 23, 11, 10) P_{10} = (0, 1, 15, 18, 7) P_{11} = (0, 1, 5, 15, 3)$$

$$P_{12} = (0, 1, 15, 12, 23) P_{13} = (0, 1, 16, 17, 24) P_{14} = (0, 1, 14, 9, 18) P_{15} = (0, 1, 5, 10, 2)$$

$$P_{16} = (0, 1, 7, 22, 20) P_{17} = (0, 1, 9, 23, 8) P_{18} = (0, 1, 10, 6, 14) P_{19} = (0, 1, 21, 14, 19)$$

$$P_{20} = (0, 1, 10, 24, 16) P_{21} = (0, 1, 23, 19, 15) P_{22} = (0, 1, 20, 20, 4) P_{23} = (0, 1, 21, 16, 11)$$

$$P_{24} = (0, 1, 9, 7, 22) P_{25} = (0, 1, 7, 8, 5)$$

Stabilizer of order 1622400 is generated by:

$$g_1 = \begin{bmatrix} 19 & 0 & 0 & 0 & 0 \\ 0 & 11 & 0 & 0 & 0 \\ 0 & 0 & 11 & 0 & 0 \\ 0 & 0 & 0 & 11 & 0 \\ 0 & 0 & 0 & 0 & 11 \end{bmatrix}_0$$

with 676 fixed points

$$g_2 = \begin{bmatrix} 11 & 0 & 0 & 0 & 0 \\ 0 & 6 & 0 & 0 & 0 \\ 0 & 0 & 3 & 0 & 0 \\ 0 & 0 & 0 & 6 & 0 \\ 0 & 0 & 0 & 0 & 3 \end{bmatrix}_1$$

with 36 fixed points

$$g_3 = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 3 & 0 & 0 & 0 \\ 0 & 0 & 2 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 \end{bmatrix}_0$$

with 28 fixed points

$$g_4 = \begin{bmatrix} 12 & 0 & 0 & 0 & 0 \\ 0 & 13 & 0 & 0 & 0 \\ 0 & 0 & 16 & 0 & 0 \\ 0 & 0 & 0 & 2 & 0 \\ 0 & 0 & 0 & 0 & 8 \end{bmatrix}_1$$

with 4 fixed points

$$g_5 = \begin{bmatrix} 4 & 0 & 0 & 0 & 0 \\ 0 & 4 & 0 & 0 & 0 \\ 0 & 0 & 4 & 0 & 0 \\ 0 & 0 & 0 & 0 & 17 \\ 0 & 0 & 0 & 20 & 0 \end{bmatrix}_0$$

with 626 fixed points

$$g_6 = \begin{bmatrix} 23 & 0 & 0 & 21 & 18 \\ 0 & 18 & 0 & 0 & 0 \\ 0 & 0 & 18 & 0 & 0 \\ 6 & 0 & 0 & 8 & 2 \\ 17 & 0 & 0 & 11 & 8 \end{bmatrix}_0$$

with 26 fixed points

$$g_7 = \begin{bmatrix} 1 & 0 & 0 & 4 & 13 \\ 0 & 22 & 0 & 0 & 0 \\ 0 & 7 & 8 & 23 & 8 \\ 9 & 19 & 0 & 5 & 14 \\ 2 & 14 & 0 & 13 & 5 \end{bmatrix}_0$$

with 2 fixed points

$$g_8 = \begin{bmatrix} 12 & 0 & 0 & 18 & 23 \\ 0 & 0 & 9 & 0 & 0 \\ 0 & 10 & 3 & 15 & 3 \\ 16 & 0 & 13 & 9 & 20 \\ 6 & 0 & 1 & 7 & 9 \end{bmatrix}_0$$

with 2 fixed points

3.2 Isomorphism Type 1

Stabilizer has order 124800
Plane intersection type is 6^{130}
Plane invariant is too big (130 planes)

$\rightarrow$	130_1
26_0	30

$\downarrow$	130_1
26_0	6

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

$\rightarrow$	130_1
26_0	30

$\downarrow$	130_1
26_0	6

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25\}_{26}$
$C_1 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,$
Column cell 1:
Order of the group that is induced on the object is 31200
Number of ancestors on 5-sets is 7.
Number of orbits on 5-sets is 7.
With 1 orbits on the object
Orbit lengths: 26
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	7	424	14	569	21	589
1	1	8	303	15	594	22	578
2	196	9	599	16	432	23	584
3	197	10	562	17	467	24	470
4	198	11	309	18	571	25	428
5	199	12	315	19	481		
6	297	13	478	20	420		

The points:

$$P_0 = (0, 1, 0, 0, 0)P_1 = (0, 0, 1, 0, 0)P_2 = (0, 1, 17, 4, 17)P_3 = (0, 1, 13, 2, 21)$$
$$P_4 = (0, 1, 13, 3, 9)P_5 = (0, 1, 17, 1, 13)P_6 = (0, 1, 13, 22, 14)P_7 = (0, 1, 9, 20, 18)$$
$$P_8 = (0, 1, 17, 11, 7)P_9 = (0, 1, 21, 13, 3)P_{10} = (0, 1, 9, 14, 11)P_{11} = (0, 1, 17, 19, 23)$$
$$P_{12} = (0, 1, 13, 8, 16)P_{13} = (0, 1, 17, 18, 10)P_{14} = (0, 1, 21, 7, 8)P_{15} = (0, 1, 9, 9, 4)$$
$$P_{16} = (0, 1, 21, 10, 24)P_{17} = (0, 1, 13, 24, 5)P_{18} = (0, 1, 21, 23, 22)P_{19} = (0, 1, 13, 6, 20)$$
$$P_{20} = (0, 1, 21, 15, 6)P_{21} = (0, 1, 9, 21, 1)P_{22} = (0, 1, 9, 16, 19)P_{23} = (0, 1, 21, 17, 2)$$
$$P_{24} = (0, 1, 17, 12, 15)P_{25} = (0, 1, 9, 5, 12)$$

Stabilizer of order 124800 is generated by:

$$g_1 = \begin{bmatrix} 18 & 0 & 0 & 0 & 0 \\ 0 & 12 & 0 & 0 & 0 \\ 0 & 0 & 12 & 0 & 0 \\ 0 & 0 & 0 & 12 & 0 \\ 0 & 0 & 0 & 0 & 12 \end{bmatrix}_0$$

with 676 fixed points

$$g_2 = \begin{bmatrix} 4 & 0 & 0 & 0 & 0 \\ 0 & 8 & 0 & 0 & 0 \\ 0 & 0 & 6 & 0 & 0 \\ 0 & 0 & 0 & 8 & 0 \\ 0 & 0 & 0 & 0 & 6 \end{bmatrix}_1$$

with 36 fixed points

$$g_3 = \begin{bmatrix} 4 & 0 & 0 & 0 & 0 \\ 0 & 3 & 0 & 0 & 0 \\ 0 & 0 & 2 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 \end{bmatrix}_0$$

with 4 fixed points

$$g_4 = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 19 & 0 & 0 & 0 \\ 0 & 0 & 12 & 0 & 0 \\ 0 & 0 & 0 & 3 & 0 \\ 0 & 0 & 0 & 0 & 2 \end{bmatrix}_1$$

with 8 fixed points

$$g_5 = \begin{bmatrix} 11 & 0 & 0 & 0 & 0 \\ 0 & 13 & 0 & 0 & 0 \\ 0 & 0 & 9 & 0 & 0 \\ 0 & 0 & 0 & 6 & 0 \\ 0 & 0 & 0 & 0 & 3 \end{bmatrix}_0$$

with 4 fixed points

$$g_6 = \begin{bmatrix} 4 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 13 \\ 0 & 0 & 0 & 5 & 0 \end{bmatrix}_0$$

with 26 fixed points

$$g_7 = \begin{bmatrix} 19 & 0 & 0 & 0 & 0 \\ 0 & 12 & 0 & 0 & 0 \\ 0 & 21 & 4 & 9 & 4 \\ 0 & 24 & 0 & 0 & 9 \\ 0 & 17 & 0 & 13 & 0 \end{bmatrix}_1$$

with 6 fixed points

$$g_8 = \begin{bmatrix} 19 & 0 & 0 & 0 & 0 \\ 0 & 0 & 5 & 0 & 0 \\ 0 & 7 & 8 & 23 & 8 \\ 0 & 0 & 10 & 11 & 0 \\ 0 & 0 & 11 & 0 & 11 \end{bmatrix}_0$$

with 2 fixed points

3.3 Isomorphism Type 2

Stabilizer has order 2704
Plane intersection type is $13^2\ 3^{2028}$
Plane invariant is

$$\begin{bmatrix} 13 & 0 \\ 0 & 13 \end{bmatrix}$$

$\rightarrow$	2_1
26_0	1

$\downarrow$	2_1
26_0	13

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25\}_{26}$
$C_1 = \{0, 1\}_2$

$\rightarrow$	2_1
26_0	1

$\downarrow$	2_1
26_0	13

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25\}_{26}$
$C_1 = \{0, 1\}_2$
Column cell 1:
Order of the group that is induced on the object is 2704
Number of ancestors on 5-sets is 91.
Number of orbits on 5-sets is 91.

With 1 orbits on the object
Orbit lengths: 26
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	7	13726	14	201	21	208
1	1	8	200	15	211	22	14370
2	196	9	8532	16	202	23	13500
3	197	10	13367	17	212	24	12871
4	198	11	215	18	5639	25	9256
5	3519	12	8152	19	203		
6	7654	13	10143	20	12162		

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,17,4,17)P_3 = (0,1,13,2,21)$$
$$P_4 = (0,1,13,3,9)P_5 = (1,16,19,8,1)P_6 = (1,9,12,4,10)P_7 = (1,9,12,11,17)$$
$$P_8 = (0,1,16,17,24)P_9 = (1,19,10,21,9)P_{10} = (1,1,17,1,12)P_{11} = (0,1,16,13,6)$$
$$P_{12} = (1,22,5,14,9)P_{13} = (1,16,19,5,5)P_{14} = (0,1,7,22,20)P_{15} = (0,1,9,23,8)$$
$$P_{16} = (0,1,21,14,19)P_{17} = (0,1,20,5,1)P_{18} = (1,1,17,21,13)P_{19} = (0,1,10,24,16)$$
$$P_{20} = (1,3,21,19,20)P_{21} = (0,1,20,20,4)P_{22} = (1,3,21,22,15)P_{23} = (1,19,10,3,12)$$
$$P_{24} = (1,5,4,16,11)P_{25} = (1,22,5,3,19)$$

Stabilizer of order 2704 is generated by:

$$g_1 = \begin{bmatrix} 4 & 0 & 0 & 6 & 16 \\ 0 & 12 & 0 & 0 & 0 \\ 0 & 0 & 12 & 0 & 0 \\ 7 & 0 & 0 & 8 & 18 \\ 12 & 0 & 0 & 3 & 8 \end{bmatrix}_0$$

with 26 fixed points

$$g_2 = \begin{bmatrix} 9 & 0 & 0 & 22 & 5 \\ 0 & 4 & 0 & 0 & 0 \\ 0 & 0 & 4 & 0 & 0 \\ 15 & 0 & 0 & 10 & 15 \\ 11 & 0 & 0 & 14 & 10 \end{bmatrix}_0$$

with 626 fixed points

$$g_3 = \begin{bmatrix} 11 & 0 & 0 & 0 & 0 \\ 0 & 11 & 0 & 0 & 0 \\ 0 & 7 & 11 & 19 & 7 \\ 0 & 9 & 0 & 6 & 0 \\ 0 & 3 & 0 & 0 & 3 \end{bmatrix}_1$$

with 8 fixed points

$$g_4 = \begin{bmatrix} 19 & 0 & 0 & 19 & 23 \\ 0 & 19 & 7 & 8 & 14 \\ 0 & 14 & 18 & 7 & 24 \\ 13 & 8 & 16 & 12 & 17 \\ 4 & 23 & 24 & 9 & 1 \end{bmatrix}_1$$

with 8 fixed points

$$g_5 = \begin{bmatrix} 0 & 8 & 1 & 2 & 5 \\ 24 & 10 & 22 & 19 & 24 \\ 19 & 19 & 23 & 19 & 18 \\ 7 & 1 & 3 & 2 & 0 \\ 18 & 19 & 19 & 8 & 6 \end{bmatrix}_1$$

with 156 fixed points

3.4 Isomorphism Type 3

Stabilizer has order 16
Plane intersection type is $4^{92}\ 3^{2232}$
Plane invariant is too big (92 planes)

$\rightarrow$	4_1	8_5	16_4	16_6	8_8	32_7	8_9
2_0	4	8	8	0	0	0	0
8_2	1	0	2	6	2	4	0
16_3	0	1	2	1	1	6	2

$\downarrow$	4_1	8_5	16_4	16_6	8_8	32_7	8_9
2_0	2	2	1	0	0	0	0
8_2	2	0	1	3	2	1	0
16_3	0	2	2	1	2	3	4

$C_0 = \{4, 14\}_2$
$C_1 = \{5, 38, 45, 67\}_4$
$C_2 = \{0, 2, 5, 15, 16, 17, 18, 22\}_8$
$C_3 = \{1, 3, 6, 7, 8, 9, 10, 11, 12, 13, 19, 20, 21, 23, 24, 25\}_{16}$
$C_4 = \{8, 10, 16, 23, 26, 35, 44, 49, 50, 63, 65, 66, 69, 79, 83, 88\}_{16}$
$C_5 = \{7, 20, 39, 62, 64, 81, 82, 91\}_8$
$C_6 = \{4, 9, 13, 18, 21, 22, 36, 40, 43, 46, 47, 54, 61, 76, 84, 86\}_{16}$
$C_7 = \{1, 2, 3, 11, 14, 15, 24, 27, 29, 30, 32, 33, 34, 37, 41, 42, 48, 52, 53, 55, 57, 58, 59, 71, 72, 73, 74, 77, 85, 87, 89, 90\}_{32}$
$C_8 = \{6, 17, 19, 28, 68, 70, 75, 78\}_8$
$C_9 = \{0, 12, 25, 31, 51, 56, 60, 80\}_8$

$\rightarrow$	4_1	8_5	16_4	16_6	8_8	32_7	8_9
2_0	4	8	8	0	0	0	0
8_2	1	0	2	6	2	4	0
16_3	0	1	2	1	1	6	2

$\downarrow$	4_1	8_5	16_4	16_6	8_8	32_7	8_9
2_0	2	2	1	0	0	0	0
8_2	2	0	1	3	2	1	0
16_3	0	2	2	1	2	3	4

$C_0 = \{4, 14\}_2$
$C_1 = \{6, 26, 34, 86\}_4$
$C_2 = \{0, 2, 5, 15, 16, 17, 18, 22\}_8$
$C_3 = \{1, 3, 6, 7, 8, 9, 10, 11, 12, 13, 19, 20, 21, 23, 24, 25\}_{16}$
$C_4 = \{12, 13, 14, 19, 25, 27, 31, 37, 45, 68, 69, 76, 84, 87, 88, 90\}_{16}$
$C_5 = \{18, 32, 38, 53, 64, 74, 89, 91\}_8$
$C_6 = \{15, 16, 17, 23, 42, 47, 48, 49, 52, 55, 62, 63, 65, 70, 78, 81\}_{16}$
$C_7 = \{0, 1, 2, 3, 7, 9, 20, 21, 22, 24, 28, 29, 35, 36, 39, 40, 41, 43, 46, 50, 51, 54, 56, 58, 59, 60, 67, 71, 72, 75, 77, 82\}_{32}$
$C_8 = \{8, 10, 30, 33, 66, 80, 83, 85\}_8$
$C_9 = \{4, 5, 11, 44, 57, 61, 73, 79\}_8$
Column cell 1:
Column cell 4:
Column cell 5:
Column cell 6:
Column cell 7:
Column cell 8:
Column cell 9:
Order of the group that is induced on the object is 16
Number of ancestors on 5-sets is 4154.
Number of orbits on 5-sets is 4154.
With 3 orbits on the object
Orbit lengths: 2, 8, 16
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	7	7246	14	427	21	15925
1	1	8	15647	15	14179	22	11254
2	196	9	6445	16	9194	23	14526
3	197	10	15017	17	8210	24	15929
4	254	11	266	18	15163	25	8376
5	3814	12	492	19	8854		
6	11975	13	3576	20	15630		

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,17,4,17)P_3 = (0,1,13,2,21)$$
$$P_4 = (0,1,21,12,20)P_5 = (1,23,12,8,3)P_6 = (1,22,17,14,20)P_7 = (1,7,12,13,6)$$
$$P_8 = (1,8,17,19,14)P_9 = (1,11,9,5,16)P_{10} = (1,11,23,3,24)P_{11} = (0,1,7,16,3)$$
$$P_{12} = (0,1,7,15,11)P_{13} = (1,11,15,6,1)P_{14} = (0,1,14,23,2)P_{15} = (1,24,7,7,15)$$
$$P_{16} = (1,19,14,9,19)P_{17} = (1,1,14,8,9)P_{18} = (1,4,7,4,24)P_{19} = (1,15,12,9,18)$$
$$P_{20} = (1,10,2,19,14)P_{21} = (1,12,9,21,22)P_{22} = (1,5,12,14,21)P_{23} = (1,10,2,6,15)$$
$$P_{24} = (1,3,23,21,22)P_{25} = (1,22,15,2,9)$$

Stabilizer of order 16 is generated by:

$$g_1 = \begin{bmatrix} 4 & 0 & 0 & 0 & 0 \\ 0 & 4 & 0 & 0 & 0 \\ 0 & 20 & 4 & 15 & 3 \\ 0 & 3 & 0 & 1 & 0 \\ 0 & 15 & 0 & 0 & 1 \end{bmatrix}_0$$

with 28 fixed points

$$g_2 = \begin{bmatrix} 19 & 0 & 0 & 0 & 0 \\ 0 & 1 & 17 & 4 & 17 \\ 0 & 16 & 1 & 3 & 23 \\ 0 & 23 & 17 & 4 & 22 \\ 0 & 3 & 4 & 2 & 4 \end{bmatrix}_0$$

with 28 fixed points

$$g_3 = \begin{bmatrix} 4 & 15 & 17 & 4 & 17 \\ 21 & 11 & 16 & 10 & 13 \\ 20 & 23 & 11 & 15 & 2 \\ 21 & 2 & 13 & 23 & 12 \\ 2 & 15 & 10 & 1 & 23 \end{bmatrix}_0$$

with 28 fixed points

$$g_4 = \begin{bmatrix} 8 & 2 & 9 & 17 & 18 \\ 13 & 17 & 8 & 17 & 5 \\ 18 & 22 & 13 & 5 & 16 \\ 3 & 20 & 14 & 15 & 19 \\ 9 & 14 & 13 & 19 & 7 \end{bmatrix}_1$$

with 156 fixed points

3.5 Isomorphism Type 4

Stabilizer has order 8
Plane intersection type is $5^2\ 4^{92}\ 3^{2212}$
Plane invariant is

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

$\rightarrow$	2_1
10_0	1
16_2	0

$\downarrow$	2_1
10_0	5
16_2	0

$C_0 = \{0, 1, 5, 6, 7, 9, 13, 18, 19, 21\}_{10}$
$C_1 = \{0, 1\}_2$
$C_2 = \{2, 3, 4, 8, 10, 11, 12, 14, 15, 16, 17, 20, 22, 23, 24, 25\}_{16}$

$\rightarrow$	2_1	8_2	4_7	16_8	16_9	8_6	4_{10}	8_{11}	10_{12}	16_{13}	2_{14}
8_0	1	3	1	4	4	1	0	0	0	0	0
2_4	1	0	0	0	0	4	4	4	0	0	0
8_3	0	1	1	2	0	1	1	3	5	4	0
8_5	0	0	0	2	4	1	0	0	0	4	1

$\downarrow$	2_1	8_2	4_7	16_8	16_9	8_6	4_{10}	8_{11}	10_{12}	16_{13}	2_{14}
8_0	4	3	2	2	2	1	0	0	0	0	0
2_4	1	0	0	0	0	1	2	1	0	0	0
8_3	0	1	2	1	0	1	2	3	4	2	0
8_5	0	0	0	1	2	1	0	0	0	2	4

$C_0 = \{0, 1, 6, 7, 9, 13, 18, 19\}_8$
$C_1 = \{5, 59\}_2$
$C_2 = \{2, 21, 24, 27, 51, 60, 66, 77\}_8$
$C_3 = \{2, 4, 10, 11, 14, 17, 20, 25\}_8$
$C_4 = \{5, 21\}_2$
$C_5 = \{3, 8, 12, 15, 16, 22, 23, 24\}_8$
$C_6 = \{23, 25, 29, 35, 52, 63, 89, 92\}_8$
$C_7 = \{6, 14, 20, 75\}_4$
$C_8 = \{4, 12, 16, 18, 19, 22, 32, 40, 41, 53, 72, 76, 78, 79, 83, 93\}_{16}$
$C_9 = \{3, 8, 15, 28, 30, 31, 39, 44, 58, 64, 71, 81, 82, 88, 90, 91\}_{16}$
$C_{10} = \{36, 48, 67, 73\}_4$
$C_{11} = \{9, 10, 45, 46, 47, 49, 85, 86\}_8$
$C_{12} = \{0, 13, 17, 26, 42, 56, 57, 65, 69, 70\}_{10}$
$C_{13} = \{1, 7, 11, 33, 34, 37, 38, 43, 50, 54, 55, 61, 62, 68, 74, 87\}_{16}$
$C_{14} = \{80, 84\}_2$
Column cell 1:
Column cell 2:
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:
Order of the group that is induced on the object is 8
Number of ancestors on 5-sets is 8242.
Number of orbits on 5-sets is 8242.
With 4 orbits on the object
Orbit lengths: 2, 8^3
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	7	6489	14	6555	21	8400
1	1	8	9802	15	14067	22	7946
2	196	9	11690	16	15636	23	8743
3	197	10	11681	17	16193	24	16186
4	254	11	14999	18	13343	25	8109
5	6452	12	15959	19	6636		
6	4482	13	6543	20	5325		

The points:

$$P_0 = (0,1,0,0,0)P_1 = (0,0,1,0,0)P_2 = (0,1,17,4,17)P_3 = (0,1,13,2,21)$$

$$P_4 = (0,1,21,12,20)P_5 = (1,4,20,5,16)P_6 = (1,22,21,7,2)P_7 = (1,20,8,21,16)$$

$$P_8 = (1,2,16,20,5)P_9 = (1,4,14,11,7)P_{10} = (1,2,23,11,7)P_{11} = (1,6,17,20,24)$$

$$P_{12} = (1,19,17,2,22)P_{13} = (1,5,19,24,16)P_{14} = (1,10,22,24,16)P_{15} = (1,20,22,17,17)$$

$$P_{16} = (1,2,10,19,14)P_{17} = (1,24,23,23,22)P_{18} = (1,6,17,15,12)P_{19} = (1,18,10,1,16)$$

$$P_{20} = (1,16,11,22,13)P_{21} = (1,18,15,17,9)P_{22} = (1,11,14,15,10)P_{23} = (1,16,4,23,18)$$

$$P_{24} = (1,12,16,23,22)P_{25} = (1,9,11,9,9)$$

Stabilizer of order 8 is generated by:

$$g_1 = \begin{bmatrix} 11 & 0 & 0 & 14 & 2 \\ 0 & 0 & 3 & 0 & 0 \\ 0 & 22 & 0 & 0 & 0 \\ 1 & 0 & 0 & 16 & 23 \\ 7 & 0 & 0 & 16 & 16 \end{bmatrix}_0$$

with 26 fixed points

$$g_2 = \begin{bmatrix} 16 & 5 & 20 & 8 & 19 \\ 10 & 14 & 4 & 6 & 20 \\ 15 & 11 & 14 & 1 & 12 \\ 22 & 12 & 20 & 21 & 18 \\ 19 & 1 & 6 & 9 & 21 \end{bmatrix}_0$$

with 26 fixed points

$$g_3 = \begin{bmatrix} 19 & 21 & 14 & 11 & 17 \\ 21 & 15 & 4 & 12 & 5 \\ 18 & 1 & 23 & 18 & 20 \\ 11 & 11 & 2 & 20 & 2 \\ 15 & 16 & 13 & 13 & 7 \end{bmatrix}_1$$

with 8 fixed points

3.6 Isomorphism Type 5

Stabilizer has order 100
Plane intersection type is $4^{75}\ 3^{2300}$
Plane invariant is too big (75 planes)

$\rightarrow$	75_1
25_0	12
1_2	0

$\downarrow$	75_1
25_0	4
1_2	0

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

$C_2 = \{23\}_1$

$\rightarrow$	75_1
25_0	12
1_2	0

$\downarrow$	75_1
25_0	4
1_2	0

$C_0 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 25\}_{25}$
$C_1 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,$
$C_2 = \{23\}_1$
Column cell 1:
Order of the group that is induced on the object is 100
Number of ancestors on 5-sets is 730.
Number of orbits on 5-sets is 698.
With 2 orbits on the object
Orbit lengths: 1, 25
The points by ranks:

i	Rank
0	0
1	1
2	196
3	201
4	245
5	9872
6	7917

i	Rank
7	7261
8	10966
9	7248
10	3959
11	453
12	11253
13	7434

i	Rank
14	15517
15	10026
16	10837
17	7356
18	15333
19	7787
20	12635

i	Rank
21	8334
22	4973
23	15276
24	5940
25	6448

The points:

$$P_0 = (0, 1, 0, 0, 0) P_1 = (0, 0, 1, 0, 0) P_2 = (0, 1, 17, 4, 17) P_3 = (0, 1, 7, 22, 20)$$

$$P_4 = (0, 1, 16, 2, 7) P_5 = (1, 11, 13, 15, 5) P_6 = (1, 21, 11, 24, 10) P_7 = (1, 18, 9, 5, 6)$$

$$P_8 = (1, 9, 12, 22, 21) P_9 = (1, 1, 15, 13, 6) P_{10} = (1, 6, 17, 21, 3) P_{11} = (0, 1, 16, 19, 5)$$

$$P_{12} = (1, 14, 11, 14, 21) P_{13} = (1, 6, 21, 1, 6) P_{14} = (1, 8, 9, 1, 14) P_{15} = (1, 12, 21, 6, 5)$$

$$P_{16} = (1, 1, 9, 11, 21) P_{17} = (1, 2, 10, 15, 6) P_{18} = (1, 10, 11, 9, 14) P_{19} = (1, 14, 6, 22, 10)$$

$$P_{20} = (1, 16, 6, 4, 11) P_{21} = (1, 20, 2, 12, 9) P_{22} = (1, 21, 3, 14, 4) P_{23} = (1, 3, 10, 20, 14)$$

$$P_{24} = (1, 11, 10, 4, 8) P_{25} = (1, 1, 5, 5, 16)$$

Stabilizer of order 100 is generated by:

$$g_1 = \begin{bmatrix} 23 & 3 & 0 & 19 & 20 \\ 0 & 19 & 0 & 0 & 0 \\ 4 & 9 & 19 & 6 & 15 \\ 10 & 15 & 0 & 24 & 18 \\ 22 & 6 & 0 & 2 & 24 \end{bmatrix}_0$$

with 28 fixed points

$$g_2 = \begin{bmatrix} 20 & 3 & 0 & 7 & 4 \\ 0 & 18 & 0 & 0 & 0 \\ 15 & 21 & 11 & 15 & 12 \\ 5 & 9 & 0 & 2 & 11 \\ 22 & 8 & 0 & 1 & 18 \end{bmatrix}_1$$

with 8 fixed points

$$g_3 = \begin{bmatrix} 19 & 0 & 0 & 2 & 9 \\ 0 & 0 & 5 & 0 & 0 \\ 0 & 13 & 0 & 0 & 0 \\ 17 & 0 & 0 & 5 & 16 \\ 1 & 0 & 0 & 17 & 5 \end{bmatrix}_0$$

with 28 fixed points

$$g_4 = \begin{bmatrix} 18 & 0 & 0 & 0 & 0 \\ 0 & 19 & 10 & 11 & 10 \\ 0 & 17 & 19 & 9 & 8 \\ 0 & 8 & 10 & 11 & 20 \\ 0 & 9 & 11 & 21 & 11 \end{bmatrix}_0$$

with 28 fixed points

$$g_5 = \begin{bmatrix} 4 & 0 & 7 & 19 & 17 \\ 16 & 2 & 10 & 13 & 18 \\ 0 & 15 & 2 & 10 & 2 \\ 21 & 2 & 18 & 7 & 0 \\ 22 & 10 & 13 & 3 & 7 \end{bmatrix}_0$$

with 28 fixed points

Chapter 4

The BLT-Sets in Numeric Form

0, 1, 196, 197, 198, 199, 205, 212, 215, 207, 214, 204, 206, 200, 210, 216, 201, 211, 217, 202, 203, 213, 208, 218, 209, 219
0, 1, 196, 197, 198, 199, 297, 424, 303, 599, 562, 309, 315, 478, 569, 594, 432, 467, 571, 481, 420, 589, 578, 584, 470, 428
0, 1, 196, 197, 198, 3519, 7654, 13726, 200, 8532, 13367, 215, 8152, 10143, 201, 211, 202, 212, 5639, 203, 12162, 208, 14370, 13500, 12871, 9256
0, 1, 196, 197, 254, 3814, 11975, 7246, 15647, 6445, 15017, 266, 492, 3576, 427, 14179, 9194, 8210, 15163, 8854, 15630, 15925, 11254, 14526, 15929, 8376
0, 1, 196, 197, 254, 6452, 4482, 6489, 9802, 11690, 11681, 14999, 15959, 6543, 6555, 14067, 15636, 16193, 13343, 6636, 5325, 8400, 7946, 8743, 16186, 8109
0, 1, 196, 201, 245, 9872, 7917, 7261, 10966, 7248, 3959, 453, 11253, 7434, 15517, 10026, 10837, 7356, 15333, 7787, 12635, 8334, 4973, 15276, 5940, 6448

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INT BLT_25_size = 26;
INT BLT_25_nb_reps = 6;
INT BLT_25_reps[] = {
0, 1, 196, 197, 198, 199, 205, 212, 215, 207, 214, 204, 206, 200, 210, 216, 201, 211, 217, 202, 203, 213, 208, 218
0, 1, 196, 197, 198, 199, 297, 424, 303, 599, 562, 309, 315, 478, 569, 594, 432, 467, 571, 481, 420, 589, 578, 584
0, 1, 196, 197, 198, 3519, 7654, 13726, 200, 8532, 13367, 215, 8152, 10143, 201, 211, 202, 212, 5639, 203, 12162,
0, 1, 196, 197, 254, 3814, 11975, 7246, 15647, 6445, 15017, 266, 492, 3576, 427, 14179, 9194, 8210, 15163, 8854, 1
0, 1, 196, 197, 254, 6452, 4482, 6489, 9802, 11690, 11681, 14999, 15959, 6543, 6555, 14067, 15636, 16193, 13343, 6
0, 1, 196, 201, 245, 9872, 7917, 7261, 10966, 7248, 3959, 453, 11253, 7434, 15517, 10026, 10837, 7356, 15333, 7787
};
const BYTE *BLT_25_stab_order[] = {
"1622400",
"124800",
"2704",
"16",
"8",
"100",
};
INT BLT_25_stab_gens[] = {
19,  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,
11,  0,  0,  0,  0,  0,  6,  0,  0,  0,  0,  0,  3,  0,  0,  0,  0,  0,  6,  0,  0,  0,  0,  0,  3, 1,
 1,  0,  0,  0,  0,  0,  3,  0,  0,  0,  0,  0,  2,  0,  0,  0,  0,  0,  1,  0,  0,  0,  0,  0,  1, 0,
12,  0,  0,  0,  0,  0, 13,  0,  0,  0,  0,  0, 16,  0,  0,  0,  0,  0,  2,  0,  0,  0,  0,  0,  8, 1,
 4,  0,  0,  0,  0,  0,  4,  0,  0,  0,  0,  0,  4,  0,  0,  0,  0,  0,  0, 17,  0,  0,  0, 20,  0, 0,
23,  0,  0, 21, 18,  0, 18,  0,  0,  0,  0,  0, 18,  0,  0,  6,  0,  0,  8,  2, 17,  0,  0, 11,  8, 0,
 1,  0,  0,  4, 13,  0, 22,  0,  0,  0,  0,  7,  8, 23,  8,  9, 19,  0,  5, 14,  2, 14,  0, 13,  5, 0,
12,  0,  0, 18, 23,  0,  0,  9,  0,  0,  0, 10,  3, 15,  3, 16,  0, 13,  9, 20,  6,  0,  1,  7,  9, 0,
18,  0,  0,  0,  0,  0, 12,  0,  0,  0,  0,  0, 12,  0,  0,  0,  0,  0, 12,  0,  0,  0,  0,  0, 12, 0,
 4,  0,  0,  0,  0,  0,  8,  0,  0,  0,  0,  0,  6,  0,  0,  0,  0,  0,  8,  0,  0,  0,  0,  0,  6, 1,
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11,  0,  0,  0,  0,  0, 13,  0,  0,  0,  0,  0,  9,  0,  0,  0,  0,  0,  6,  0,  0,  0,  0,  0,  3, 0,
```

```
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19,  0,  0,  0,  0,  0, 12,  0,  0,  0,  0, 21,  4,  9,  4,  0, 24,  0,  0,  9,  0, 17,  0, 13,  0, 1,
19,  0,  0,  0,  0,  0,  0,  5,  0,  0,  0,  7,  8, 23,  8,  0,  0, 10, 11,  0,  0,  0, 11,  0, 11, 0,
 4,  0,  0,  6, 16,  0, 12,  0,  0,  0,  0,  0, 12,  0,  0,  7,  0,  0,  8, 18, 12,  0,  0,  3,  8, 0,
 9,  0,  0, 22,  5,  0,  4,  0,  0,  0,  0,  0,  4,  0,  0, 15,  0,  0, 10, 15, 11,  0,  0, 14, 10, 0,
11,  0,  0,  0,  0,  0, 11,  0,  0,  0,  0,  7, 11, 19,  7,  0,  9,  0,  6,  0,  0,  3,  0,  0,  3, 1,
19,  0,  0, 19, 23,  0, 19,  7,  8, 14,  0, 14, 18,  7, 24, 13,  8, 16, 12, 17,  4, 23, 24,  9,  1, 1,
 0,  8,  1,  2,  5, 24, 10, 22, 19, 24, 19, 19, 23, 19, 18,  7,  1,  3,  2,  0, 18, 19, 19,  8,  6, 1,
 4,  0,  0,  0,  0,  0,  4,  0,  0,  0,  0, 20,  4, 15,  3,  0,  3,  0,  1,  0,  0, 15,  0,  0,  1, 0,
19,  0,  0,  0,  0,  0,  1, 17,  4, 17,  0, 16,  1,  3, 23,  0, 23, 17,  4, 22,  0,  3,  4,  2,  4, 0,
 4, 15, 17,  4, 17, 21, 11, 16, 10, 13, 20, 23, 11, 15,  2, 21,  2, 13, 23, 12,  2, 15, 10,  1, 23, 0,
 8,  2,  9, 17, 18, 13, 17,  8, 17,  5, 18, 22, 13,  5, 16,  3, 20, 14, 15, 19,  9, 14, 13, 19,  7, 1,
11,  0,  0, 14,  2,  0,  0,  3,  0,  0,  0, 22,  0,  0,  0,  1,  0,  0, 16, 23,  7,  0,  0, 16, 16, 0,
16,  5, 20,  8, 19, 10, 14,  4,  6, 20, 15, 11, 14,  1, 12, 22, 12, 20, 21, 18, 19,  1,  6,  9, 21, 0,
19, 21, 14, 11, 17, 21, 15,  4, 12,  5, 18,  1, 23, 18, 20, 11, 11,  2, 20,  2, 15, 16, 13, 13,  7, 1,
23,  3,  0, 19, 20,  0, 19,  0,  0,  0,  4,  9, 19,  6, 15, 10, 15,  0, 24, 18, 22,  6,  0,  2, 24, 0,
20,  3,  0,  7,  4,  0, 18,  0,  0,  0, 15, 21, 11, 15, 12,  5,  9,  0,  2, 11, 22,  8,  0,  1, 18, 1,
19,  0,  0,  2,  9,  0,  0,  5,  0,  0,  0, 13,  0,  0,  0, 17,  0,  0,  5, 16,  1,  0,  0, 17,  5, 0,
18,  0,  0,  0,  0,  0, 19, 10, 11, 10,  0, 17, 19,  9,  8,  0,  8, 10, 11, 20,  0,  9, 11, 21, 11, 0,
 4,  0,  7, 19, 17, 16,  2, 10, 13, 18,  0, 15,  2, 10,  2, 21,  2, 18,  7,  0, 22, 10, 13,  3,  7, 0,
};
INT BLT_25_stab_gens_fst[] = { 0, 8, 16, 21, 25, 28};
INT BLT_25_stab_gens_len[] = { 8, 8, 5, 4, 3, 5};
INT BLT_25_make_element_size = 0;
```