BLT-sets of Q(4, 3)

Anton Betten

May 5, 2015

Contents

Chapter 1

Summary

There are 1 BLT-sets.

Chapter 2

Invariants

Chapter 3

The BLT-Sets

3.1 Isomorphism Type 0

Stabilizer has order 192
Plane intersection type is 4
Plane invariant is

$$\left[\ 4\ \right]$$

$\rightarrow$	1_1
4_0	1

$\downarrow$	1_1
4_0	4

$C_0 = \{0, 1, 2, 3\}_4$
$C_1 = \{0\}_1$

$\rightarrow$	1_1
4_0	1

$\downarrow$	1_1
4_0	4

$C_0 = \{0, 1, 2, 3\}_4$
$C_1 = \{0\}_1$
Column cell 1:
Order of the group that is induced on the object is 24
Number of ancestors on 3-sets is 1.
Number of orbits on 3-sets is 1.
With 1 orbits on the object
Orbit lengths: 4
The points by ranks:

i	Rank	i	Rank	i	Rank	i	Rank
0	0	1	1	2	14	3	15

The points:

$$P_0 = (0, 1, 0, 0, 0)P_1 = (0, 0, 1, 0, 0)P_2 = (0, 1, 1, 2, 1)P_3 = (0, 1, 1, 1, 2)$$

Stabilizer of order 192 is generated by:

$$g_1 = \begin{pmatrix} 10000 \\ 02000 \\ 00200 \\ 00020 \\ 00002 \end{pmatrix}$$

with 16 fixed points

$$g_2 = \begin{pmatrix} 10000 \\ 01000 \\ 00100 \\ 00020 \\ 00002 \end{pmatrix}$$

with 6 fixed points

$$g_3 = \begin{pmatrix} 20000 \\ 02000 \\ 00200 \\ 00001 \\ 00010 \end{pmatrix}$$

with 16 fixed points

$$g_4 = \begin{pmatrix} 00022 \\ 02000 \\ 00200 \\ 10012 \\ 10021 \end{pmatrix}$$

with 10 fixed points

$$g_5 = \begin{pmatrix} 20000 \\ 01000 \\ 01121 \\ 01001 \\ 02010 \end{pmatrix}$$

with 6 fixed points

$$g_6 = \begin{pmatrix} 00011 \\ 00100 \\ 01000 \\ 10021 \\ 10012 \end{pmatrix}$$

with 2 fixed points

Chapter 4

The BLT-Sets in Numeric Form

0, 1, 14, 15

```
INT BLT_3_size = 4;
INT BLT_3_nb_reps = 1;
INT BLT_3_reps[] = {
0, 1, 14, 15,
};
const BYTE *BLT_3_stab_order[] = {
"192",
};
INT BLT_3_stab_gens[] = {
1, 0, 0, 0, 0, 0, 2, 0, 0, 0, 0, 0, 2, 0, 0, 0, 0, 0, 2, 0, 0, 0, 0, 0, 2,
1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 2, 0, 0, 0, 0, 0, 2,
2, 0, 0, 0, 0, 0, 2, 0, 0, 0, 0, 0, 2, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0,
0, 0, 0, 2, 2, 0, 2, 0, 0, 0, 0, 0, 2, 0, 0, 1, 0, 0, 1, 2, 1, 0, 0, 2, 1,
2, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 1, 2, 1, 0, 1, 0, 0, 1, 0, 2, 0, 1, 0,
0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 2, 1, 1, 0, 0, 1, 2,
};
INT BLT_3_stab_gens_fst[] = { 0};
INT BLT_3_stab_gens_len[] = { 6};
INT BLT_3_make_element_size = 0;
```