1 BLT set 2 over GF(7)

Points on the quadric $x_0^2 + x_1x_2 + x_3x_4$:

$P_1 = (0, 1, 0, 0, 0)$

$P_2 = (0, 0, 1, 0, 0)$

$P_3 = (0, 1, 2, 6, 2)$

$P_4 = (0, 1, 4, 3, 1)$

$P_5 = (1, 6, 6, 5, 1)$

$P_6 = (1, 1, 1, 4, 3)$

$P_7 = (1, 2, 2, 2, 1)$

$P_8 = (1, 5, 5, 4, 4)$

Stabilizer of order 384 is generated by:

$$g_1 = \begin{pmatrix} 2 & 0 & 0 & 3 & 6 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 3 & 0 & 0 & 3 & 4 \\ 5 & 0 & 0 & 1 & 3 \end{pmatrix}$$

$$g_2 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 2 & 1 & 6 & 2 \\ 0 & 2 & 0 & 0 & 2 \\ 0 & 6 & 0 & 4 & 0 \end{pmatrix}$$

$$g_3 = \begin{pmatrix} 6 & 0 & 0 & 0 & 0 \\ 0 & 5 & 6 & 1 & 5 \\ 0 & 6 & 5 & 1 & 5 \\ 0 & 5 & 5 & 1 & 3 \\ 0 & 1 & 1 & 6 & 1 \end{pmatrix}$$

$$g_4 = \begin{pmatrix} 6 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 5 \\ 0 & 0 & 0 & 3 & 0 \end{pmatrix}$$

$$g_5 = \begin{pmatrix} 0 & 0 & 0 & 5 & 3 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 2 & 0 & 0 & 4 & 6 \\ 1 & 0 & 0 & 5 & 4 \end{pmatrix}$$

$$g_6 = \begin{pmatrix} 3 & 5 & 0 & 3 & 2 \\ 0 & 1 & 0 & 0 & 0 \\ 6 & 1 & 1 & 2 & 6 \\ 1 & 6 & 0 & 6 & 1 \\ 5 & 2 & 0 & 4 & 6 \end{pmatrix}$$

Induced action on the BLT-set:

The induced group has order 384 and is generated by:

g_1 =(7, 8)

g_2 =(2, 4)

g_3 =(1, 4)(2, 3)

g_4 =(5, 6)(7, 8)

g_5 =(5, 8, 6, 7)

g_6 =(2, 5)(4, 6)

Kernel has order 1 and is generated by:

There are 1 orbits on the BLT set.

The orbit length are [8]

The orbits are:

$O_0 = \{1, 2, 3, 4, 5, 6, 7, 8\}$ (length 8)