1 BLT set 5 over GF(19)

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

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

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

$P_3 = (0, 1, 9, 18, 9)$

$P_4 = (0, 1, 1, 6, 3)$

$P_5 = (0, 1, 1, 15, 5)$

$P_6 = (0, 1, 5, 9, 10)$

$P_7 = (0, 1, 5, 2, 7)$

$P_8 = (0, 1, 6, 3, 17)$

$P_9 = (1, 16, 11, 6, 18)$

$P_{10} = (1, 11, 17, 1, 2)$

$P_{11} = (1, 14, 8, 18, 18)$

$P_{12} = (1, 2, 13, 1, 11)$

$P_{13} = (1, 10, 15, 12, 8)$

$P_{14} = (1, 8, 15, 1, 12)$

$P_{15} = (1, 4, 4, 6, 13)$

$P_{16} = (1, 15, 14, 5, 11)$

$P_{17} = (1, 5, 9, 13, 14)$

$P_{18} = (1, 18, 3, 3, 7)$

$P_{19} = (1, 6, 5, 6, 17)$

$P_{20} = (1, 4, 1, 13, 4)$

Stabilizer of order 20 is generated by:

$$g_1 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 18 & 0 & 0 \\ 0 & 18 & 18 & 13 & 16 \\ 0 & 0 & 14 & 8 & 0 \\ 0 & 0 & 4 & 0 & 12 \end{pmatrix}$$

$$g_2 = \begin{pmatrix} 8 & 0 & 1 & 9 & 12 \\ 1 & 4 & 4 & 6 & 13 \\ 9 & 16 & 7 & 16 & 1 \\ 4 & 17 & 9 & 15 & 9 \\ 14 & 13 & 9 & 16 & 3 \end{pmatrix}$$

Induced action on the BLT-set:

The induced group has order 20 and is generated by:

g_1 =(1, 2, 4, 5)(3, 6, 8, 7)(9, 14, 20, 18)(10, 12, 19, 11)(13, 15, 16, 17)

g_2 =(1, 15, 20, 11)(2, 19, 17, 7)(3, 16, 5, 9)(4, 8, 10, 14)(6, 18, 13, 12)

Kernel has order 1 and is generated by:

There are 1 orbits on the BLT set.

The orbit length are [20]

The orbits are:

$O_0 = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20\}$ (length 20)