

Number of vertices $n = 9$.

Adjacencies of Graph

1. vertex 1 adjacent to 2 3 4 5 6 7 8 9
2. vertex 2 adjacent to 1 4 5 6 7 8 9
3. vertex 3 adjacent to 1 4 5 6 7 8 9
4. vertex 4 adjacent to 1 2 3
5. vertex 5 adjacent to 1 2 3
6. vertex 6 adjacent to 1 2 3
7. vertex 7 adjacent to 1 2 3
8. vertex 8 adjacent to 1 2 3
9. vertex 9 adjacent to 1 2 3

Size of automorphism group of the graph=1440

Full group: $|Aut(polytope)| = 368640$

Restricted group: $|Aut(G) \times switch| = 368640$

Number of orbits for the full group : 2

List of orbits of facets for the full group: Total number of orbits = 2 Total number of facets = 168

1. Inequality 1 with incidence 192 and stabilizer of size 7680. Orbit size is 48 nature: 3-cycle inequality, $C=[3, 9, 1]$ $F=[3, 9]$

(1,2) : 0	(1,3) : 1	(1,4) : 0	(1,5) : 0	(1,6) : 0	(1,7) : 0
(1,8) : 0	(1,9) : 1	(2,4) : 0	(2,5) : 0	(2,6) : 0	(2,7) : 0
(2,8) : 0	(2,9) : 0	(3,4) : 0	(3,5) : 0	(3,6) : 0	(3,7) : 0
(3,8) : 0	(3,9) : -1				

2. Inequality 2 with incidence 128 and stabilizer of size 3072. Orbit size is 120 nature: 4-cycle inequality, $C=[3, 9, 2, 7]$ $F=[3, 9]$

(1,2) : 0	(1,3) : 0	(1,4) : 0	(1,5) : 0	(1,6) : 0	(1,7) : 0
(1,8) : 0	(1,9) : 0	(2,4) : 0	(2,5) : 0	(2,6) : 0	(2,7) : 1
(2,8) : 0	(2,9) : 1	(3,4) : 0	(3,5) : 0	(3,6) : 0	(3,7) : 1
(3,8) : 0	(3,9) : -1				