

Number of vertices $n = 9$.

Adjacencies of Graph

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

Size of automorphism group of the graph=10080

Full group: $|Aut(polytope)| = 832359628800$

Restricted group: $|Aut(G) \times switch| = 2580480$

Number of orbits for the full group : 1

List of orbits of facets for the full group: Total number of orbits = 1 Total number of facets = 196

1. Inequality 1 with incidence 128 and stabilizer of size 4246732800. Orbit size is 196 nature: 4-cycle inequality, $C=[2, 8, 1, 6]$ $F=[2, 8]$

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

Number of orbits for the restricted group : 2

List of orbits of facets for the restricted group: Total number of orbits = 2 Total number of facets = 196

1. Inequality 1 with incidence 128 and stabilizer of size 15360. Orbit size is 168 nature: 4-cycle inequality, $C=[2, 8, 1, 6]$ $F=[2, 8]$

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

2. Inequality 2 with incidence 128 and stabilizer of size 92160. Orbit size is 28 nature: edge inequality $e=[1, 8]$

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