

Number of vertices $n = 6$.

Adjacencies of Graph

1. vertex 1 adjacent to 2 3 4 5 6
2. vertex 2 adjacent to 1 3 4 5 6
3. vertex 3 adjacent to 1 2 5 6
4. vertex 4 adjacent to 1 2 5 6
5. vertex 5 adjacent to 1 2 3 4
6. vertex 6 adjacent to 1 2 3 4

Size of automorphism group of the graph=16

Full group: $|Aut(polytope)| = 512$

Restricted group: $|Aut(G) \times switch| = 512$

Number of orbits for the full group : 4

List of orbits of facets for the full group: Total number of orbits = 4 Total number of facets = 184

1. Inequality 1 with incidence 24 and stabilizer of size 32. Orbit size is 16

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|--------------|-------------|-------------|-------------|-------------|-------------|
| $(1,2) : -1$ | $(1,3) : 0$ | $(1,4) : 0$ | $(1,5) : 0$ | $(1,6) : 1$ | $(2,3) : 0$ |
| $(2,4) : 0$ | $(2,5) : 0$ | $(2,6) : 1$ | $(3,5) : 0$ | $(3,6) : 0$ | $(4,5) : 0$ |
| $(4,6) : 0$ | | | | | |

2. Inequality 2 with incidence 24 and stabilizer of size 16. Orbit size is 32

| | | | | | |
|-------------|-------------|-------------|-------------|-------------|--------------|
| $(1,2) : 0$ | $(1,3) : 0$ | $(1,4) : 1$ | $(1,5) : 1$ | $(1,6) : 0$ | $(2,3) : 0$ |
| $(2,4) : 0$ | $(2,5) : 0$ | $(2,6) : 0$ | $(3,5) : 0$ | $(3,6) : 0$ | $(4,5) : -1$ |
| $(4,6) : 0$ | | | | | |

3. Inequality 3 with incidence 16 and stabilizer of size 64. Orbit size is 8

| | | | | | |
|-------------|-------------|-------------|-------------|--------------|-------------|
| $(1,2) : 0$ | $(1,3) : 0$ | $(1,4) : 0$ | $(1,5) : 0$ | $(1,6) : 0$ | $(2,3) : 0$ |
| $(2,4) : 0$ | $(2,5) : 0$ | $(2,6) : 0$ | $(3,5) : 1$ | $(3,6) : -1$ | $(4,5) : 1$ |
| $(4,6) : 1$ | | | | | |

4. Inequality 4 with incidence 14 and stabilizer of size 4. Orbit size is 128

| | | | | | |
|--------------|--------------|-------------|-------------|-------------|--------------|
| $(1,2) : -1$ | $(1,3) : -1$ | $(1,4) : 1$ | $(1,5) : 0$ | $(1,6) : 1$ | $(2,3) : -1$ |
| $(2,4) : 1$ | $(2,5) : 0$ | $(2,6) : 1$ | $(3,5) : 1$ | $(3,6) : 1$ | $(4,5) : 1$ |
| $(4,6) : -1$ | | | | | |