The Cone MET7

13th January 2002

1 The intrisic informations concerning the graph of extreme rays of MET7.ext

The graph considered is made of 55226 elements.
The group acting on MET7.ext is ReprS7
Under the group action we have in fact only 46 orbits to consider.
The diameter of the graph is 3.
The list of orbits is with adjacency and Size info:

E1:	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1	0	1	1	18502	7
E2:	0	0	0	0	1	1	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	11662	21
E3:	0	0	0	1	1	1	0	0	1	1	1	0	1	1	1	1	1	1	0	0	0	9842	35
E4:	0	1	1	1	2	2	1	1	1	2	2	2	2	1	1	2	1	1	1	1	0	593	105
E5:	0	0	1	1	1	2	0	1	1	1	2	1	1	1	2	2	2	1	2	1	1	495	140
E6:	0	1	1	1	2	2	1	1	1	2	2	2	2	1	1	2	1	1	1	1	2	482	210
E7:	0	1	1	1	1	2	1	1	1	1	2	0	2	2	1	2	2	1	2	1	1	461	630
E8:	0	1	1	2	2	2	1	1	2	2	2	2	1	1	1	1	1	1	0	2	2	385	315
E9:	1	1	1	1	2	2	2	2	2	1	1	2	2	1	1	2	1	1	1	1	2	340	35
E10:	0	0	1	1	2	2	0	1	1	2	2	1	1	2	2	2	1	1	1	1	2	306	210
E11:	0	1	1	1	1	2	1	1	1	1	2	2	2	2	1	2	2	1	2	1	1	247	105
E12:	1	1	1	1	2	2	2	2	2	1	1	2	2	1	1	2	1	1	1	3	2	202	420
E13:	0	1	1	1	2	2	1	1	1	2	2	2	2	1	1	2	1	1	1	3	2	186	1260
E14:	0	1	1	2	2	3	1	1	2	2	3	2	1	1	2	1	1	2	2	1	1	158	630
E15:	0	1	1	2	2	2	1	1	2	2	2	2	1	1	1	1	1	1	2	2	2	149	210
E16:	1	1	1	1	2	2	2	2	2	1	1	2	2	1	1	2	1	3	3	1	2	124	1260
E17:	1	1	1	2	2	2	2	2	1	1	3	2	1	1	3	1	3	1	2	2	2	95	1260
E18:	1	1	1	1	2	2	2	2	2	1	1	2	2	1	1	2	1	3	1	3	2	95	630
E19:	1	1	1	1	1	2	2	2	2	2	1	2	2	2	1	2	2	1	2	1	1	75	21
E20:	1	1	1	1	2	2	1	1	2	1	2	2	1	2	1	1	2	1	1	2	1	63	630
E21:	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	2	1	1	1	1	2	63	70
E22:	1	1	2	2	2	3	2	1	3	3	2	3	1	3	2	2	2	1	4	3	1	56	2520
E23:	1	1	1	1	2	2	1	1	2	1	2	2	1	2	1	2	1	1	1	1	1	56	360
E24:	1	1	2	2	2	3	2	1	3	3	2	3	1	3	2	2	2	1	2	3	1	55	2520
E25:	1	1	1	1	2	2	2	2	2	1	3	2	2	1	3	2	3	1	3	1	2	54	630
E26:	1	1	1	1	2	2	1	1	2	1	2	2	1	2	1	2	1	1	1	1	2	45	2520
E27:	1	1	1	1	1	2	1	1	1	2	1	2	2	1	1	2	1	1	1	2	1	45	1260
E28:	1	1	1	2	2	3	2	2	1	3	2	2	1	3	2	3	1	2	2	1	3	39	2520
E29:	1	1	1	1	1	2	1	1	1	2	2	2	2	1	1	2	1	1	2	1	1	38	2520
E30:	1	1	1	1	1	2	1	1	1	2	1	2	2	1	2	2	1	2	1	2	1	38	420
E31:	1	1	2	3	3	3	2	3	2	2	4	3	2	4	2	1	1	3	2	4	2	35	2520
E32:	1	1	1	1	2	2	1	1	2	1	2	2	1	2	1	2	2	1	1	2	1	29	2520
E33:	1	2	2	3	4	4	3	3	2	3	5	4	5	2	2	5	2	2	5	3	2	29	2520
E34:	1	1	1	1	1	2	1	1	1	2	1	2	2	1	1	2	1	2	1	2	1	29	1260
E35:	1	2	2	4	4	4	3	3	3	5	5	4	2	2	2	2	2	2	2	2	4	29	1260
E36:	1	1	1	1	2	2	1	1	2	1	2	2	1	2	1	1	2	1	1	2	3	29	630
E37:	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	2	1	1	1	2	2	29	630
E38:	1	1	2	2	2	3	2	1	3	3	2	3	1	3	2	4	2	3	2	3	1	26	2520
E39:	1	1	3	3	3	3	2	2	2	4	4	2	4	2	4	2	4	2	2	4	2	23	5040
E40:	1	1	3	3	3	3	2	2	2	2	4	2	2	4	2	4	2	4	2	4	2	23	2520
E41:	1	2	2	4	4	4	3	3	3	3	5	4	2	2	2	2	2	2	4	2	2	23	1260
E42:	1	1	3	3	3	3	2	2	2	2	2	2	2	4	4	4	2	2	2	2	4	23	1260
E43:	2	2	3	3	5	5	2	3	5	3	5	5	3	5	3	6	4	2	2	4	2	21	2520
E44:	1	1	1	1	1	2	1	1	1	2	1	2	2	1	2	2	1	2	2	1	1	20	2520
E45:	1	1	1	1	1	2	1	1	2	2	1	2	1	2	1	1	2	1	2	2	1	20	2520
E46:	1	1	1	1	1	2	1	1	2	2	1	2	1	2	1	2	1	1	1	1	1	20	252

1.1 The local graphs

The complemented local graph are:
We consider graph with cardinal inferior or equal to 20
The complemented local graph for orbit 44 is:

1	1	:	4
2	2	:	5 7
3	0	:	
4	7	:	1 5 6 7 9 10 18
5	3	:	2 4 13
6	3	:	4 11 13
7	6	:	2 4 8 11 13 19
8	2	:	7 9
9	2	:	4 8
10	1	:	4
11	2	:	6 7
12	0	:	
13	3	:	5 6 7
14	0	:	
15	0	:	
16	0	:	
17	0	:	
18	1	:	4
19	1	:	7
20	0	:	

The complemented local graph for orbit 45 is:

1	0	:	
2	2	:	5 13
3	0	:	
4	4	:	6 7 8 11
5	6	:	2 6 7 8 9 11
6	5	:	4 5 13 14 15
7	6	:	4 5 13 14 15 19
8	3	:	4 5 13
9	2	:	5 14
10	0	:	
11	2	:	4 5
12	0	:	
13	4	:	2 6 7 8
14	3	:	6 7 9
15	2	:	6 7
16	0	:	
17	0	:	
18	0	:	
19	1	:	7
20	0	:	

The complemented local graph for orbit 46 is:

1	0	:	
2	3	:	10 11 13
3	1	:	10
4	1	:	13
5	3	:	8 10 12
6	0	:	
7	0	:	
8	3	:	5 13 15
9	0	:	
10	3	:	2 3 5
11	1	:	2
12	1	:	5
13	3	:	2 4 8
14	0	:	
15	1	:	8
16	0	:	
17	0	:	
18	0	:	
19	0	:	
20	0	:	

1.2 invariant group of Orbits

The invariant group of x is the set of g such that $g(x) = x$ denoted by G_x.
If x and y are in the same orbit then the groups G_x and G_y are conjuguate.
For any element x we denote O_x its Orbit, we have $|O_x| \times |G_x| = |G|$ We print only nontrivial groups
Invariant group of Orbit 1:

1. Group Size is 720.
2. Elements are : (6 5 4 3 2 1 7), (6 5 4 3 1 2 7), (6 5 4 2 3 1 7), (6 5 4 1 3 2 7), (6 5 4 2 1 3 7), (6 5 4 1 2 3 7), (6 5 3 4 2 1 7), (6 5 3 4 1 2 7), (6 5 2 4 3 1 7), (6 5 1 4 3 2 7), (6 5 2 4 1 3 7), (6 5 1 4 2 3 7), (6 5 3 2 4 1 7), (6 5 3 1 4 2 7), (6 5 2 3 4 1 7), (6 5 1 3 4 2 7), (6 5 2 1 4 3 7), (6 5 1 2 4 3 7), (6 5 3 2 1 4 7), (6 5 3 1 2 4 7), (6 5 2 3 1 4 7), (6 5 1 3 2 4 7), (6 5 2 1 3 4 7), (6 5 1 2 3 4 7), (6 4 5 3 2 1 7), (6 4 5 3 1 2 7), (6 4 5 2 3 1 7), (6 4 5 1 3 2 7), (6 4 5 2 1 3 7), (6 4 5 1 2 3 7), (6 3 5 4 2 1 7), (6 3 5 4 1 2 7), (6 2 5 4 3 1 7), (6 1 5 4 3 2 7), (6 2 5 4 1 3 7), (6 1 5 4 2 3 7), (6 3 5 2 4 1 7), (6 3 5 1 4 2 7), (6 2 5 3 4 1 7), (6 1 5 3 4 2 7), (6 2 5 1 4 3 7), (6 1 5 2 4 3 7), (6 3 5 2 1 4 7), (6 3 5 1 2 4 7), (6 2 5 3 1 4 7), (6 1 5 3 2 4 7), (6 2 5 1 3 4 7), (6 1 5 2 3 4 7), (6 4 3 5 2 1 7), (6 4 3 5 1 2 7), (6 4 2 5 3 1 7), (6 4 1 5 3 2 7), (6 4 2 5 1 3 7), (6 4 1 5 2 3 7), (6 3 4 5 2 1 7), (6 3 4 5 1 2 7), (6 2 4 5 3 1 7), (6 1 4 5 3 2 7), (6 2 4 5 1 3 7), (6 1 4 5 2 3 7), (6 3 2 5 4 1 7), (6 3 1 5 4 2 7), (6 2 3 5 4 1 7), (6 1 3 5 4 2 7), (6 2 1 5 4 3 7), (6 1 2 5 4 3 7), (6 3 2 5 1 4 7), (6 3 1 5 2 4 7), (6 2 3 5 1 4 7), (6 1 3 5 2 4 7), (6 2 1 5 3 4 7), (6 1 2 5 3 4 7), (6 4 3 2 5 1 7), (6 4 3 1 5 2 7), (6 4 2 3 5 1 7), (6 4 1 3 5 2 7), (6 4 2 1 5 3 7), (6 4 1 2 5 3 7), (6 3 4 2 5 1 7), (6 3 4 1 5 2 7), (6 2 4 3 5 1 7), (6 1 4 3 5 2 7), (6 2 4 1 5 3 7), (6 1 4 2 5 3 7), (6 3 2 4 5 1 7), (6 3 1 4 5 2 7), (6 2 3 4 5 1 7), (6 1 3 4 5 2 7), (6 2 1 4 5 3 7), (6 1 2 4 5 3 7), (6 3 2 1 5 4 7), (6 3 1 2 5 4 7), (6 2 3 1 5 4 7), (6 1 3 2 5 4 7), (6 2 1 3 5 4 7), (6 1 2 3 5 4 7), (6 4 3 2 1 5 7), (6 4 3 1 2 5 7), (6 4 2 3 1 5 7), (6 4 1 3 2 5 7), (6 4 2 1 3 5 7), (6 4 1 2 3 5 7), (6 3 4 2 1 5 7), (6 3 4 1 2 5 7), (6 2 4 3 1 5 7), (6 1 4 3 2 5 7), (6 2 4 1 3 5 7), (6 1 4 2 3 5 7), (6 3 2 4 1 5 7), (6 3 1 4 2 5 7), (6 2 3 4 1 5 7), (6 1 3 4 2 5 7), (6 2 1 4 3 5 7), (6 1 2 4 3 5 7), (6 3 2 1 4 5 7), (6 3 1 2 4 5 7), (6 2 3 1 4 5 7), (6 1 3 2 4 5 7), (6 2 1 3 4 5 7), (6 1 2 3 4 5 7), (5 6 4 3 2 1 7), (5 6 4 3 1 2 7), (5 6 4 2 3 1 7), (5 6 4 1 3 2 7), (5 6 4 2 1 3 7), (5 6 4 1 2 3 7), (5 6 3 4 2 1 7), (5 6 3 4 1 2 7), (5 6 2 4 3 1 7), (5 6 1 4 3 2 7), (5 6 2 4 1 3 7), (5 6 1 4 2 3 7), (5 6 3 2 4 1 7), (5 6 3 1 4 2

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), (4 2 5 1 6 3 7), (4 1 5 2 6 3 7), (3 4 5 2 6 1 7), (3 4 5 1 6 2 7), (2 4 5 3 6 1 7), (1 4 5 3 6 2 7),
(2 4 5 1 6 3 7), (1 4 5 2 6 3 7), (3 2 5 4 6 1 7), (3 1 5 4 6 2 7), (2 3 5 4 6 1 7), (1 3 5 4 6 2 7), (2
1 5 4 6 3 7), (1 2 5 4 6 3 7), (3 2 5 1 6 4 7), (3 1 5 2 6 4 7), (2 3 5 1 6 4 7), (1 3 5 2 6 4 7), (2 1
5 3 6 4 7), (1 2 5 3 6 4 7), (4 3 2 5 6 1 7), (4 3 1 5 6 2 7), (4 2 3 5 6 1 7), (4 1 3 5 6 2 7), (4 2 1
5 6 3 7), (4 1 2 5 6 3 7), (3 4 2 5 6 1 7), (3 4 1 5 6 2 7), (2 4 3 5 6 1 7), (1 4 3 5 6 2 7), (2 4 1 5
6 3 7), (1 4 2 5 6 3 7), (3 2 4 5 6 1 7), (3 1 4 5 6 2 7), (2 3 4 5 6 1 7), (1 3 4 5 6 2 7), (2 1 4 5 6
3 7), (1 2 4 5 6 3 7), (3 2 1 5 6 4 7), (3 1 2 5 6 4 7), (2 3 1 5 6 4 7), (1 3 2 5 6 4 7), (2 1 3 5 6 4
7), (1 2 3 5 6 4 7), (4 3 2 1 6 5 7), (4 3 1 2 6 5 7), (4 2 3 1 6 5 7), (4 1 3 2 6 5 7), (4 2 1 3 6 5 7
), (4 1 2 3 6 5 7), (3 4 2 1 6 5 7), (3 4 1 2 6 5 7), (2 4 3 1 6 5 7), (1 4 3 2 6 5 7), (2 4 1 3 6 5 7),
(1 4 2 3 6 5 7), (3 2 4 1 6 5 7), (3 1 4 2 6 5 7), (2 3 4 1 6 5 7), (1 3 4 2 6 5 7), (2 1 4 3 6 5 7), (1
2 4 3 6 5 7), (3 2 1 4 6 5 7), (3 1 2 4 6 5 7), (2 3 1 4 6 5 7), (1 3 2 4 6 5 7), (2 1 3 4 6 5 7), (1 2
3 4 6 5 7), (5 4 3 2 1 6 7), (5 4 3 1 2 6 7), (5 4 2 3 1 6 7), (5 4 1 3 2 6 7), (5 4 2 1 3 6 7), (5 4 1
2 3 6 7), (5 3 4 2 1 6 7), (5 3 4 1 2 6 7), (5 2 4 3 1 6 7), (5 1 4 3 2 6 7), (5 2 4 1 3 6 7), (5 1 4 2
3 6 7), (5 3 2 4 1 6 7), (5 3 1 4 2 6 7), (5 2 3 4 1 6 7), (5 1 3 4 2 6 7), (5 2 1 4 3 6 7), (5 1 2 4 3
6 7), (5 3 2 1 4 6 7), (5 3 1 2 4 6 7), (5 2 3 1 4 6 7), (5 1 3 2 4 6 7), (5 2 1 3 4 6 7), (5 1 2 3 4 6
7), (4 5 3 2 1 6 7), (4 5 3 1 2 6 7), (4 5 2 3 1 6 7), (4 5 1 3 2 6 7), (4 5 2 1 3 6 7), (4 5 1 2 3 6 7
), (3 5 4 2 1 6 7), (3 5 4 1 2 6 7), (2 5 4 3 1 6 7), (1 5 4 3 2 6 7), (2 5 4 1 3 6 7), (1 5 4 2 3 6 7),
(3 5 2 4 1 6 7), (3 5 1 4 2 6 7), (2 5 3 4 1 6 7), (1 5 3 4 2 6 7), (2 5 1 4 3 6 7), (1 5 2 4 3 6 7), (3
5 2 1 4 6 7), (3 5 1 2 4 6 7), (2 5 3 1 4 6 7), (1 5 3 2 4 6 7), (2 5 1 3 4 6 7), (1 5 2 3 4 6 7), (4 3
5 2 1 6 7), (4 3 5 1 2 6 7), (4 2 5 3 1 6 7), (4 1 5 3 2 6 7), (4 2 5 1 3 6 7), (4 1 5 2 3 6 7), (3 4 5
2 1 6 7), (3 4 5 1 2 6 7), (2 4 5 3 1 6 7), (1 4 5 3 2 6 7), (2 4 5 1 3 6 7), (1 4 5 2 3 6 7), (3 2 5 4
1 6 7), (3 1 5 4 2 6 7), (2 3 5 4 1 6 7), (1 3 5 4 2 6 7), (2 1 5 4 3 6 7), (1 2 5 4 3 6 7), (3 2 5 1 4
6 7), (3 1 5 2 4 6 7), (2 3 5 1 4 6 7), (1 3 5 2 4 6 7), (2 1 5 3 4 6 7), (1 2 5 3 4 6 7), (4 3 2 5 1 6
7), (4 3 1 5 2 6 7), (4 2 3 5 1 6 7), (4 1 3 5 2 6 7), (4 2 1 5 3 6 7), (4 1 2 5 3 6 7), (3 4 2 5 1 6 7
), (3 4 1 5 2 6 7), (2 4 3 5 1 6 7), (1 4 3 5 2 6 7), (2 4 1 5 3 6 7), (1 4 2 5 3 6 7), (3 2 4 5 1 6 7),
(3 1 4 5 2 6 7), (2 3 4 5 1 6 7), (1 3 4 5 2 6 7), (2 1 4 5 3 6 7), (1 2 4 5 3 6 7), (3 2 1 5 4 6 7), (3
1 2 5 4 6 7), (2 3 1 5 4 6 7), (1 3 2 5 4 6 7), (2 1 3 5 4 6 7), (1 2 3 5 4 6 7), (4 3 2 1 5 6 7), (4 3
1 2 5 6 7), (4 2 3 1 5 6 7), (4 1 3 2 5 6 7), (4 2 1 3 5 6 7), (4 1 2 3 5 6 7), (3 4 2 1 5 6 7), (3 4 1
2 5 6 7), (2 4 3 1 5 6 7), (1 4 3 2 5 6 7), (2 4 1 3 5 6 7), (1 4 2 3 5 6 7), (3 2 4 1 5 6 7), (3 1 4 2
5 6 7), (2 3 4 1 5 6 7), (1 3 4 2 5 6 7), (2 1 4 3 5 6 7), (1 2 4 3 5 6 7), (3 2 1 4 5 6 7), (3 1 2 4 5
6 7), (2 3 1 4 5 6 7), (1 3 2 4 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 2:

1. Group Size is 240.

2. Elements are : (5 4 3 2 1 7 6), (5 4 3 1 2 7 6), (5 4 2 3 1 7 6), (5 4 1 3 2 7 6), (5 4 2 1 3 7 6), (5
4 1 2 3 7 6), (5 3 4 2 1 7 6), (5 3 4 1 2 7 6), (5 2 4 3 1 7 6), (5 1 4 3 2 7 6), (5 2 4 1 3 7 6), (5 1
4 2 3 7 6), (5 3 2 4 1 7 6), (5 3 1 4 2 7 6), (5 2 3 4 1 7 6), (5 1 3 4 2 7 6), (5 2 1 4 3 7 6), (5 1 2
4 3 7 6), (5 3 2 1 4 7 6), (5 3 1 2 4 7 6), (5 2 3 1 4 7 6), (5 1 3 2 4 7 6), (5 2 1 3 4 7 6), (5 1 2 3

4 7 6), (4 5 3 2 1 7 6), (4 5 3 1 2 7 6), (4 5 2 3 1 7 6), (4 5 1 3 2 7 6), (4 5 2 1 3 7 6), (4 5 1 2 3 7 6), (3 5 4 2 1 7 6), (3 5 4 1 2 7 6), (2 5 4 3 1 7 6), (1 5 4 3 2 7 6), (2 5 4 1 3 7 6), (1 5 4 2 3 7 6), (3 5 2 4 1 7 6), (3 5 1 4 2 7 6), (2 5 3 4 1 7 6), (1 5 3 4 2 7 6), (2 5 1 4 3 7 6), (1 5 2 4 3 7 6), (3 5 2 1 4 7 6), (3 5 1 2 4 7 6), (2 5 3 1 4 7 6), (1 5 3 2 4 7 6), (2 5 1 3 4 7 6), (1 5 2 3 4 7 6), (4 3 5 2 1 7 6), (4 3 5 1 2 7 6), (4 2 5 3 1 7 6), (4 1 5 3 2 7 6), (4 2 5 1 3 7 6), (4 1 5 2 3 7 6), (3 4 5 2 1 7 6), (3 4 5 1 2 7 6), (2 4 5 3 1 7 6), (1 4 5 3 2 7 6), (2 4 5 1 3 7 6), (1 4 5 2 3 7 6), (3 2 5 4 1 7 6), (3 1 5 4 2 7 6), (2 3 5 4 1 7 6), (1 3 5 4 2 7 6), (2 1 5 4 3 7 6), (1 2 5 4 3 7 6), (3 2 5 1 4 7 6), (3 1 5 2 4 7 6), (2 3 5 1 4 7 6), (1 3 5 2 4 7 6), (2 1 5 3 4 7 6), (1 2 5 3 4 7 6), (4 3 2 5 1 7 6), (4 3 1 5 2 7 6), (4 2 3 5 1 7 6), (4 1 3 5 2 7 6), (4 2 1 5 3 7 6), (4 1 2 5 3 7 6), (3 4 2 5 1 7 6), (3 4 1 5 2 7 6), (2 4 3 5 1 7 6), (1 4 3 5 2 7 6), (2 4 1 5 3 7 6), (1 4 2 5 3 7 6), (3 2 4 5 1 7 6), (3 1 4 5 2 7 6), (2 3 4 5 1 7 6), (1 3 4 5 2 7 6), (2 1 4 5 3 7 6), (1 2 4 5 3 7 6), (3 2 1 5 4 7 6), (3 1 2 5 4 7 6), (2 3 1 5 4 7 6), (1 3 2 5 4 7 6), (2 1 3 5 4 7 6), (1 2 3 5 4 7 6), (4 3 2 1 5 7 6), (4 3 1 2 5 7 6), (4 2 3 1 5 7 6), (4 1 3 2 5 7 6), (4 2 1 3 5 7 6), (4 1 2 3 5 7 6), (3 4 2 1 5 7 6), (3 4 1 2 5 7 6), (2 4 3 1 5 7 6), (1 4 3 2 5 7 6), (2 4 1 3 5 7 6), (1 4 2 3 5 7 6), (3 2 4 1 5 7 6), (3 1 4 2 5 7 6), (2 3 4 1 5 7 6), (1 3 4 2 5 7 6), (2 1 4 3 5 7 6), (1 2 4 3 5 7 6), (3 2 1 4 5 7 6), (3 1 2 4 5 7 6), (2 3 1 4 5 7 6), (1 3 2 4 5 7 6), (2 1 3 4 5 7 6), (1 2 3 4 5 7 6), (5 4 3 2 1 6 7), (5 4 3 1 2 6 7), (5 4 2 3 1 6 7), (5 4 1 3 2 6 7), (5 4 2 1 3 6 7), (5 4 1 2 3 6 7), (5 3 4 2 1 6 7), (5 3 4 1 2 6 7), (5 2 4 3 1 6 7), (5 1 4 3 2 6 7), (5 2 4 1 3 6 7), (5 1 4 2 3 6 7), (5 3 2 4 1 6 7), (5 3 1 4 2 6 7), (5 2 3 4 1 6 7), (5 1 3 4 2 6 7), (5 2 1 4 3 6 7), (5 1 2 4 3 6 7), (5 3 2 1 4 6 7), (5 3 1 2 4 6 7), (5 2 3 1 4 6 7), (5 1 3 2 4 6 7), (5 2 1 3 4 6 7), (5 1 2 3 4 6 7), (4 5 3 2 1 6 7), (4 5 3 1 2 6 7), (4 5 2 3 1 6 7), (4 5 1 3 2 6 7), (4 5 2 1 3 6 7), (4 5 1 2 3 6 7), (3 5 4 2 1 6 7), (3 5 4 1 2 6 7), (2 5 4 3 1 6 7), (1 5 4 3 2 6 7), (2 5 4 1 3 6 7), (1 5 4 2 3 6 7), (3 5 2 4 1 6 7), (3 5 1 4 2 6 7), (2 5 3 4 1 6 7), (1 5 3 4 2 6 7), (2 5 1 4 3 6 7), (1 5 2 4 3 6 7), (3 5 2 1 4 6 7), (3 5 1 2 4 6 7), (2 5 3 1 4 6 7), (1 5 3 2 4 6 7), (2 5 1 3 4 6 7), (1 5 2 3 4 6 7), (4 3 5 2 1 6 7), (4 3 5 1 2 6 7), (4 2 5 3 1 6 7), (4 1 5 3 2 6 7), (4 2 5 1 3 6 7), (4 1 5 2 3 6 7), (3 4 5 2 1 6 7), (3 4 5 1 2 6 7), (2 4 5 3 1 6 7), (1 4 5 3 2 6 7), (2 4 5 1 3 6 7), (1 4 5 2 3 6 7), (3 2 5 4 1 6 7), (3 1 5 4 2 6 7), (2 3 5 4 1 6 7), (1 3 5 4 2 6 7), (2 1 5 4 3 6 7), (1 2 5 4 3 6 7), (3 2 5 1 4 6 7), (3 1 5 2 4 6 7), (2 3 5 1 4 6 7), (1 3 5 2 4 6 7), (2 1 5 3 4 6 7), (1 2 5 3 4 6 7), (4 3 2 5 1 6 7), (4 3 1 5 2 6 7), (4 2 3 5 1 6 7), (4 1 3 5 2 6 7), (4 2 1 5 3 6 7), (4 1 2 5 3 6 7), (3 4 2 5 1 6 7), (3 4 1 5 2 6 7), (2 4 3 5 1 6 7), (1 4 3 5 2 6 7), (2 4 1 5 3 6 7), (1 4 2 5 3 6 7), (3 2 4 5 1 6 7), (3 1 4 5 2 6 7), (2 3 4 5 1 6 7), (1 3 4 5 2 6 7), (2 1 4 5 3 6 7), (1 2 4 5 3 6 7), (3 2 1 5 4 6 7), (3 1 2 5 4 6 7), (2 3 1 5 4 6 7), (1 3 2 5 4 6 7), (2 1 3 5 4 6 7), (1 2 3 5 4 6 7), (4 3 2 1 5 6 7), (4 3 1 2 5 6 7), (4 2 3 1 5 6 7), (4 1 3 2 5 6 7), (4 2 1 3 5 6 7), (4 1 2 3 5 6 7), (3 4 2 1 5 6 7), (3 4 1 2 5 6 7), (2 4 3 1 5 6 7), (1 4 3 2 5 6 7), (2 4 1 3 5 6 7), (1 4 2 3 5 6 7), (3 2 4 1 5 6 7), (3 1 4 2 5 6 7), (2 3 4 1 5 6 7), (1 3 4 2 5 6 7), (2 1 4 3 5 6 7), (1 2 4 3 5 6 7), (3 2 1 4 5 6 7), (3 1 2 4 5 6 7), (2 3 1 4 5 6 7), (1 3 2 4 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 3:

1. Group Size is 144.

2. Elements are : (4 3 2 1 7 6 5), (4 3 1 2 7 6 5), (4 2 3 1 7 6 5), (4 1 3 2 7 6 5), (4 2 1 3 7 6 5), (4 1 2 3 7 6 5), (3 4 2 1 7 6 5), (3 4 1 2 7 6 5), (2 4 3 1 7 6 5), (1 4 3 2 7 6 5), (2 4 1 3 7 6 5), (1 4 2 3 7 6 5), (3 2 4 1 7 6 5), (3 1 4 2 7 6 5), (2 3 4 1 7 6 5), (1 3 4 2 7 6 5), (2 1 4 3 7 6 5), (1 2 4 3 7 6 5), (3 2 1 4 7 6 5), (3 1 2 4 7 6 5), (2 3 1 4 7 6 5), (1 3 2 4 7 6 5), (2 1 3 4 7 6 5), (1 2 3 4 7 6 5), (4 3 2 1 7 5 6), (4 3 1 2 7 5 6), (4 2 3 1 7 5 6), (4 1 3 2 7 5 6), (4 2 1 3 7 5 6), (4 1 2 3 7 5 6), (3 4 2 1 7 5 6), (3 4 1 2 7 5 6), (2 4 3 1 7 5 6), (1 4 3 2 7 5 6), (2 4 1 3 7 5 6), (1 4 2 3 7 5 6), (3 2 4 1 7 5 6), (3 1 4 2 7 5 6), (2 3 4 1 7 5 6), (1 3 4 2 7 5 6), (2 1 4 3 7 5 6), (1 2 4 3 7 5 6), (3 2 1 4 7 5 6), (3 1 2 4 7 5 6), (2 3 1 4 7 5 6), (1 3 2 4 7 5 6), (2 1 3 4 7 5 6), (1 2 3 4 7 5 6), (4 3 2 1 6 7 5), (4 3 1 2 6 7 5), (4 2 3 1 6 7 5), (4 1 3 2 6 7 5), (4 2 1 3 6 7 5), (4 1 2 3 6 7 5), (3 4 2 1 6 7 5), (3 4 1 2 6 7 5), (2 4 3 1 6 7 5), (1 4 3 2 6 7 5), (2 4 1 3 6 7 5), (1 4 2 3 6 7 5), (3 2 4 1 6 7 5), (3 1 4 2 6 7 5), (2 3 4 1 6 7 5), (1 3 4 2 6 7 5), (2 1 4 3 6 7 5), (1 2 4 3 6 7 5), (3 2 1 4 6 7 5), (3 1 2 4 6 7 5), (2 3 1 4 6 7 5), (1 3 2 4 6 7 5), (2 1 3 4 6 7 5), (1 2 3 4 6 7 5), (4 3 2 1

5 7 6), (4 3 1 2 5 7 6), (4 2 3 1 5 7 6), (4 1 3 2 5 7 6), (4 2 1 3 5 7 6), (4 1 2 3 5 7 6), (3 4 2 1 5 7 6), (3 4 1 2 5 7 6), (2 4 3 1 5 7 6), (1 4 3 2 5 7 6), (2 4 1 3 5 7 6), (1 4 2 3 5 7 6), (3 2 4 1 5 7 6), (3 1 4 2 5 7 6), (2 3 4 1 5 7 6), (1 3 4 2 5 7 6), (2 1 4 3 5 7 6), (1 2 4 3 5 7 6), (3 2 1 4 5 7 6), (3 1 2 4 5 7 6), (2 3 1 4 5 7 6), (1 3 2 4 5 7 6), (2 1 3 4 5 7 6), (1 2 3 4 5 7 6), (4 3 2 1 6 5 7), (4 3 1 2 6 5 7), (4 2 3 1 6 5 7), (4 1 3 2 6 5 7), (4 2 1 3 6 5 7), (4 1 2 3 6 5 7), (3 4 2 1 6 5 7), (3 4 1 2 6 5 7), (2 4 3 1 6 5 7), (1 4 3 2 6 5 7), (2 4 1 3 6 5 7), (1 4 2 3 6 5 7), (3 2 4 1 6 5 7), (3 1 4 2 6 5 7), (2 3 4 1 6 5 7), (1 3 4 2 6 5 7), (2 1 4 3 6 5 7), (1 2 4 3 6 5 7), (3 2 1 4 6 5 7), (3 1 2 4 6 5 7), (2 3 1 4 6 5 7), (1 3 2 4 6 5 7), (2 1 3 4 6 5 7), (1 2 3 4 6 5 7), (4 3 2 1 5 6 7), (4 3 1 2 5 6 7), (4 2 3 1 5 6 7), (4 1 3 2 5 6 7), (4 2 1 3 5 6 7), (4 1 2 3 5 6 7), (3 4 2 1 5 6 7), (3 4 1 2 5 6 7), (2 4 3 1 5 6 7), (1 4 3 2 5 6 7), (2 4 1 3 5 6 7), (1 4 2 3 5 6 7), (3 2 4 1 5 6 7), (3 1 4 2 5 6 7), (2 3 4 1 5 6 7), (1 3 4 2 5 6 7), (2 1 4 3 5 6 7), (1 2 4 3 5 6 7), (3 2 1 4 5 6 7), (3 1 2 4 5 6 7), (2 3 1 4 5 6 7), (1 3 2 4 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 4:

1. Group Size is 48.
2. Elements are : (7 6 5 4 3 2 1), (7 6 5 4 3 1 2), (7 6 5 3 4 2 1), (7 6 5 3 4 1 2), (7 6 4 5 3 2 1), (7 6 4 5 3 1 2), (7 6 3 5 4 2 1), (7 6 3 5 4 1 2), (7 6 4 3 5 2 1), (7 6 4 3 5 1 2), (7 6 3 4 5 2 1), (7 6 3 4 5 1 2), (6 7 5 4 3 2 1), (6 7 5 4 3 1 2), (6 7 5 3 4 2 1), (6 7 5 3 4 1 2), (6 7 4 5 3 2 1), (6 7 4 5 3 1 2), (6 7 3 5 4 2 1), (6 7 3 5 4 1 2), (6 7 4 3 5 2 1), (6 7 4 3 5 1 2), (6 7 3 4 5 2 1), (6 7 3 4 5 1 2), (2 1 5 4 3 7 6), (1 2 5 4 3 7 6), (2 1 5 3 4 7 6), (1 2 5 3 4 7 6), (2 1 4 5 3 7 6), (1 2 4 5 3 7 6), (2 1 3 5 4 7 6), (1 2 3 5 4 7 6), (2 1 4 3 5 7 6), (1 2 4 3 5 7 6), (2 1 3 4 5 7 6), (1 2 3 4 5 7 6), (2 1 5 4 3 6 7), (1 2 5 4 3 6 7), (2 1 5 3 4 6 7), (1 2 5 3 4 6 7), (2 1 4 5 3 6 7), (1 2 4 5 3 6 7), (2 1 3 5 4 6 7), (1 2 3 5 4 6 7), (2 1 4 3 5 6 7), (1 2 4 3 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 5:

1. Group Size is 36.
2. Elements are : (3 2 1 6 5 4 7), (3 1 2 6 5 4 7), (2 3 1 6 5 4 7), (1 3 2 6 5 4 7), (2 1 3 6 5 4 7), (1 2 3 6 5 4 7), (3 2 1 6 4 5 7), (3 1 2 6 4 5 7), (2 3 1 6 4 5 7), (1 3 2 6 4 5 7), (2 1 3 6 4 5 7), (1 2 3 6 4 5 7), (3 2 1 5 6 4 7), (3 1 2 5 6 4 7), (2 3 1 5 6 4 7), (1 3 2 5 6 4 7), (2 1 3 5 6 4 7), (1 2 3 5 6 4 7), (3 2 1 4 6 5 7), (3 1 2 4 6 5 7), (2 3 1 4 6 5 7), (1 3 2 4 6 5 7), (2 1 3 4 6 5 7), (1 2 3 4 6 5 7), (3 2 1 5 4 6 7), (3 1 2 5 4 6 7), (2 3 1 5 4 6 7), (1 3 2 5 4 6 7), (2 1 3 5 4 6 7), (1 2 3 5 4 6 7), (3 2 1 4 5 6 7), (3 1 2 4 5 6 7), (2 3 1 4 5 6 7), (1 3 2 4 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 6:

1. Group Size is 24.
2. Elements are : (2 1 5 4 3 7 6), (1 2 5 4 3 7 6), (2 1 5 3 4 7 6), (1 2 5 3 4 7 6), (2 1 4 5 3 7 6), (1 2 4 5 3 7 6), (2 1 3 5 4 7 6), (1 2 3 5 4 7 6), (2 1 4 3 5 7 6), (1 2 4 3 5 7 6), (2 1 3 4 5 7 6), (1 2 3 4 5 7 6), (2 1 5 4 3 6 7), (1 2 5 4 3 6 7), (2 1 5 3 4 6 7), (1 2 5 3 4 6 7), (2 1 4 5 3 6 7), (1 2 4 5 3 6 7), (2 1 3 5 4 6 7), (1 2 3 5 4 6 7), (2 1 4 3 5 6 7), (1 2 4 3 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 7:

1. Group Size is 8.
2. Elements are : (2 1 4 3 6 5 7), (1 2 4 3 6 5 7), (2 1 3 4 6 5 7), (1 2 3 4 6 5 7), (2 1 4 3 5 6 7), (1 2 4 3 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 8:

1. Group Size is 16.

2. Elements are : (6 5 4 3 2 1 7), (6 5 4 3 1 2 7), (6 5 3 4 2 1 7), (6 5 3 4 1 2 7), (5 6 4 3 2 1 7), (5 6 4 3 1 2 7), (5 6 3 4 2 1 7), (5 6 3 4 1 2 7), (2 1 4 3 6 5 7), (1 2 4 3 6 5 7), (2 1 3 4 6 5 7), (1 2 3 4 6 5 7), (2 1 4 3 5 6 7), (1 2 4 3 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 9:

1. Group Size is 144.

2. Elements are : (7 5 4 3 2 6 1), (7 5 4 2 3 6 1), (7 5 3 4 2 6 1), (7 5 2 4 3 6 1), (7 5 3 2 4 6 1), (7 5 2 3 4 6 1), (7 4 5 3 2 6 1), (7 4 5 2 3 6 1), (7 3 5 4 2 6 1), (7 2 5 4 3 6 1), (7 3 5 2 4 6 1), (7 2 5 3 4 6 1), (7 4 3 5 2 6 1), (7 4 2 5 3 6 1), (7 3 4 5 2 6 1), (7 2 4 5 3 6 1), (7 3 2 5 4 6 1), (7 2 3 5 4 6 1), (7 4 3 2 5 6 1), (7 4 2 3 5 6 1), (7 3 4 2 5 6 1), (7 2 4 3 5 6 1), (7 3 2 4 5 6 1), (7 2 3 4 5 6 1), (7 5 4 3 2 1 6), (7 5 4 2 3 1 6), (7 5 3 4 2 1 6), (7 5 2 4 3 1 6), (7 5 3 2 4 1 6), (7 5 2 3 4 1 6), (7 4 5 3 2 1 6), (7 4 5 2 3 1 6), (7 3 5 4 2 1 6), (7 2 5 4 3 1 6), (7 3 5 2 4 1 6), (7 2 5 3 4 1 6), (7 4 3 5 2 1 6), (7 4 2 5 3 1 6), (7 3 4 5 2 1 6), (7 2 4 5 3 1 6), (7 3 2 5 4 1 6), (7 2 3 5 4 1 6), (7 4 3 2 5 1 6), (7 4 2 3 5 1 6), (7 3 4 2 5 1 6), (7 2 4 3 5 1 6), (7 3 2 4 5 1 6), (7 2 3 4 5 1 6), (6 5 4 3 2 7 1), (6 5 4 2 3 7 1), (6 5 3 4 2 7 1), (6 5 2 4 3 7 1), (6 5 3 2 4 7 1), (6 5 2 3 4 7 1), (6 4 5 3 2 7 1), (6 4 5 2 3 7 1), (6 3 5 4 2 7 1), (6 2 5 4 3 7 1), (6 3 5 2 4 7 1), (6 2 5 3 4 7 1), (6 4 3 5 2 7 1), (6 4 2 5 3 7 1), (6 3 4 5 2 7 1), (6 2 4 5 3 7 1), (6 3 2 5 4 7 1), (6 2 3 5 4 7 1), (6 4 3 2 5 7 1), (6 4 2 3 5 7 1), (6 3 4 2 5 7 1), (6 2 4 3 5 7 1), (6 3 2 4 5 7 1), (6 2 3 4 5 7 1), (1 5 4 3 2 7 6), (1 5 4 2 3 7 6), (1 5 3 4 2 7 6), (1 5 2 4 3 7 6), (1 5 3 2 4 7 6), (1 5 2 3 4 7 6), (1 4 5 3 2 7 6), (1 4 5 2 3 7 6), (1 3 5 4 2 7 6), (1 2 5 4 3 7 6), (1 3 5 2 4 7 6), (1 2 5 3 4 7 6), (1 4 3 5 2 7 6), (1 4 2 5 3 7 6), (1 3 4 5 2 7 6), (1 2 4 5 3 7 6), (1 3 2 5 4 7 6), (1 2 3 5 4 7 6), (1 4 3 2 5 7 6), (1 4 2 3 5 7 6), (1 3 4 2 5 7 6), (1 2 4 3 5 7 6), (1 3 2 4 5 7 6), (1 2 3 4 5 7 6), (6 5 4 3 2 1 7), (6 5 4 2 3 1 7), (6 5 3 4 2 1 7), (6 5 2 4 3 1 7), (6 5 3 2 4 1 7), (6 5 2 3 4 1 7), (6 4 5 3 2 1 7), (6 4 5 2 3 1 7), (6 3 5 4 2 1 7), (6 2 5 4 3 1 7), (6 3 5 2 4 1 7), (6 2 5 3 4 1 7), (6 4 3 5 2 1 7), (6 4 2 5 3 1 7), (6 3 4 5 2 1 7), (6 2 4 5 3 1 7), (6 3 2 5 4 1 7), (6 2 3 5 4 1 7), (6 4 3 2 5 1 7), (6 4 2 3 5 1 7), (6 3 4 2 5 1 7), (6 2 4 3 5 1 7), (6 3 2 4 5 1 7), (6 2 3 4 5 1 7), (1 5 4 3 2 6 7), (1 5 4 2 3 6 7), (1 5 3 4 2 6 7), (1 5 2 4 3 6 7), (1 5 3 2 4 6 7), (1 5 2 3 4 6 7), (1 4 5 3 2 6 7), (1 4 5 2 3 6 7), (1 3 5 4 2 6 7), (1 2 5 4 3 6 7), (1 3 5 2 4 6 7), (1 2 5 3 4 6 7), (1 4 3 5 2 6 7), (1 4 2 5 3 6 7), (1 3 4 5 2 6 7), (1 2 4 5 3 6 7), (1 3 2 5 4 6 7), (1 2 3 5 4 6 7), (1 4 3 2 5 6 7), (1 4 2 3 5 6 7), (1 3 4 2 5 6 7), (1 2 4 3 5 6 7), (1 3 2 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 10:

1. Group Size is 24.

2. Elements are : (3 2 1 5 4 7 6), (3 1 2 5 4 7 6), (2 3 1 5 4 7 6), (1 3 2 5 4 7 6), (2 1 3 5 4 7 6), (1 2 3 5 4 7 6), (3 2 1 4 5 7 6), (3 1 2 4 5 7 6), (2 3 1 4 5 7 6), (1 3 2 4 5 7 6), (2 1 3 4 5 7 6), (1 2 3 4 5 7 6), (3 2 1 5 4 6 7), (3 1 2 5 4 6 7), (2 3 1 5 4 6 7), (1 3 2 5 4 6 7), (2 1 3 5 4 6 7), (1 2 3 5 4 6 7), (3 2 1 4 5 6 7), (3 1 2 4 5 6 7), (2 3 1 4 5 6 7), (1 3 2 4 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 11:

1. Group Size is 48.

2. Elements are : (2 1 6 5 4 3 7), (1 2 6 5 4 3 7), (2 1 6 5 3 4 7), (1 2 6 5 3 4 7), (2 1 6 4 5 3 7), (1 2 6 4 5 3 7), (2 1 6 3 5 4 7), (1 2 6 3 5 4 7), (2 1 6 4 3 5 7), (1 2 6 4 3 5 7), (2 1 6 3 4 5 7), (1 2 6 3 4 5 7), (2 1 5 6 4 3 7), (1 2 5 6 4 3 7), (2 1 5 6 3 4 7), (1 2 5 6 3 4 7), (2 1 4 6 5 3 7), (1 2 4 6 5 3 7), (2 1 3 6 5 4 7), (1 2 3 6 5 4 7), (2 1 4 6 3 5 7), (1 2 4 6 3 5 7), (2 1 3 6 4 5 7), (1 2 3 6 4 5 7), (2 1 5 4 6 3 7), (1 2 5 4 6 3 7), (2 1 5 3 6 4 7), (1 2 5 3 6 4 7), (2 1 4 5 6 3 7), (1 2 4 5 6 3 7), (2 1 3 5 6 4 7), (1 2 3 5 6 4 7), (2 1 4 3 6 5 7), (1 2 4 3 6 5 7), (2 1 3 4 6 5 7), (1 2 3 4 6 5 7), (2 1 5 4 3 6 7), (1 2 5 4 3 6 7), (2 1 5 3 4 6 7), (1 2 5 3 4 6 7), (2 1 4 5 3 6 7), (1 2 4 5 3 6 7), (2 1 3 5 4 6 7), (1 2 3 5 4 6 7), (2 1 4 3 5 6 7), (1 2 4 3 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 12:

1. Group Size is 12.
2. Elements are : (6 4 3 2 5 1 7), (6 4 2 3 5 1 7), (6 3 4 2 5 1 7), (6 2 4 3 5 1 7), (6 3 2 4 5 1 7), (6 2 3 4 5 1 7), (1 4 3 2 5 6 7), (1 4 2 3 5 6 7), (1 3 4 2 5 6 7), (1 2 4 3 5 6 7), (1 3 2 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 13:

1. Group Size is 4.
2. Elements are : (2 1 4 3 5 6 7), (1 2 4 3 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 14:

1. Group Size is 8.
2. Elements are : (2 1 4 3 6 5 7), (1 2 4 3 6 5 7), (2 1 3 4 6 5 7), (1 2 3 4 6 5 7), (2 1 4 3 5 6 7), (1 2 4 3 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 15:

1. Group Size is 24.
2. Elements are : (2 1 4 3 7 6 5), (1 2 4 3 7 6 5), (2 1 3 4 7 6 5), (1 2 3 4 7 6 5), (2 1 4 3 7 5 6), (1 2 4 3 7 5 6), (2 1 3 4 7 5 6), (1 2 3 4 7 5 6), (2 1 4 3 6 7 5), (1 2 4 3 6 7 5), (2 1 3 4 6 7 5), (1 2 3 4 6 7 5), (2 1 4 3 5 7 6), (1 2 4 3 5 7 6), (2 1 3 4 5 7 6), (1 2 3 4 5 7 6), (2 1 4 3 6 5 7), (1 2 4 3 6 5 7), (2 1 3 4 6 5 7), (1 2 3 4 6 5 7), (2 1 4 3 5 6 7), (1 2 4 3 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 16:

1. Group Size is 4.
2. Elements are : (1 3 2 5 4 7 6), (1 2 3 5 4 7 6), (1 3 2 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 17:

1. Group Size is 4.
2. Elements are : (5 3 2 4 1 6 7), (5 2 3 4 1 6 7), (1 3 2 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 18:

1. Group Size is 8.
2. Elements are : (6 3 2 5 4 1 7), (6 2 3 5 4 1 7), (6 3 2 4 5 1 7), (6 2 3 4 5 1 7), (1 3 2 5 4 6 7), (1 2 3 5 4 6 7), (1 3 2 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 19:

1. Group Size is 240.
2. Elements are : (7 6 5 4 3 2 1), (7 6 5 4 2 3 1), (7 6 5 3 4 2 1), (7 6 5 2 4 3 1), (7 6 5 3 2 4 1), (7 6 5 2 3 4 1), (7 6 4 5 3 2 1), (7 6 4 5 2 3 1), (7 6 3 5 4 2 1), (7 6 2 5 4 3 1), (7 6 3 5 2 4 1), (7 6 2 5 3 4 1), (7 6 4 3 5 2 1), (7 6 4 2 5 3 1), (7 6 3 4 5 2 1), (7 6 2 4 5 3 1), (7 6 3 2 5 4 1), (7 6 2 3 5 4 1), (7 6 4 3 2 5 1), (7 6 4 2 3 5 1), (7 6 3 4 2 5 1), (7 6 2 4 3 5 1), (7 6 3 2 4 5 1), (7 6 2 3 4 5 1), (7 5 6 4 3 2 1), (7 5 6 4 2 3 1), (7 5 6 3 4 2 1), (7 5 6 2 4 3 1), (7 5 6 3 2 4 1), (7 5 6 2 3 4 1), (7 4 6 5 3 2 1), (7 4 6 5 2 3 1), (7 3 6 5 4 2 1), (7 2 6 5 4 3 1), (7 3 6 5 2 4 1), (7 2 6 5 3 4 1), (7 4 6 3 5 2 1), (7 4 6 2 5 3 1), (7 3 6 4 5 2 1), (7 2 6 4 5 3 1), (7 3 6 2 5 4 1), (7 2 6 3 5 4 1), (7 4 6 3 2 5 1), (7 4 6 2 3 5 1), (7 3 6 4 2 5 1), (7 2 6 4 3 5 1), (7 3 6 2 4 5 1), (7 2 6 3 4 5 1), (7 5 4 6 3 2 1), (7 5 4 6 2 3 1), (7 5 3 6 4 2 1), (7 5 2 6 4 3 1), (7 5 3 6 2 4 1), (7 5 2 6 3 4 1), (7

4 5 6 3 2 1), (7 4 5 6 2 3 1), (7 3 5 6 4 2 1), (7 2 5 6 4 3 1), (7 3 5 6 2 4 1), (7 2 5 6 3 4 1), (7 4 3 6 5 2 1), (7 4 2 6 5 3 1), (7 3 4 6 5 2 1), (7 2 4 6 5 3 1), (7 3 2 6 5 4 1), (7 2 3 6 5 4 1), (7 4 3 6 2 5 1), (7 4 2 6 3 5 1), (7 3 4 6 2 5 1), (7 2 4 6 3 5 1), (7 3 2 6 4 5 1), (7 2 3 6 4 5 1), (7 5 4 3 6 2 1), (7 5 4 2 6 3 1), (7 5 3 4 6 2 1), (7 5 2 4 6 3 1), (7 5 3 2 6 4 1), (7 5 2 3 6 4 1), (7 4 5 3 6 2 1), (7 4 5 2 6 3 1), (7 3 5 4 6 2 1), (7 2 5 4 6 3 1), (7 3 5 2 6 4 1), (7 2 5 3 6 4 1), (7 4 3 5 6 2 1), (7 4 2 5 6 3 1), (7 3 4 5 6 2 1), (7 2 4 5 6 3 1), (7 3 2 5 6 4 1), (7 2 3 5 6 4 1), (7 4 3 2 6 5 1), (7 4 2 3 6 5 1), (7 3 4 2 6 5 1), (7 2 4 3 6 5 1), (7 3 2 4 6 5 1), (7 2 3 4 6 5 1), (7 5 4 3 2 6 1), (7 5 4 2 3 6 1), (7 5 3 4 2 6 1), (7 5 2 4 3 6 1), (7 5 3 2 4 6 1), (7 5 2 3 4 6 1), (7 4 5 3 2 6 1), (7 4 5 2 3 6 1), (7 3 5 4 2 6 1), (7 2 5 4 3 6 1), (7 3 5 2 4 6 1), (7 2 5 3 4 6 1), (7 4 3 5 2 6 1), (7 4 2 5 3 6 1), (7 3 4 5 2 6 1), (7 2 4 5 3 6 1), (7 3 2 5 4 6 1), (7 2 3 5 4 6 1), (7 4 3 2 5 6 1), (7 4 2 3 5 6 1), (7 3 4 2 5 6 1), (7 2 4 3 5 6 1), (7 3 2 4 5 6 1), (7 2 3 4 5 6 1), (1 6 5 4 3 2 7), (1 6 5 4 2 3 7), (1 6 5 3 4 2 7), (1 6 5 2 4 3 7), (1 6 5 3 2 4 7), (1 6 5 2 3 4 7), (1 6 4 5 3 2 7), (1 6 4 5 2 3 7), (1 6 3 5 4 2 7), (1 6 2 5 4 3 7), (1 6 3 5 2 4 7), (1 6 2 5 3 4 7), (1 6 4 3 5 2 7), (1 6 4 2 5 3 7), (1 6 3 4 5 2 7), (1 6 2 4 5 3 7), (1 6 3 2 5 4 7), (1 6 2 3 5 4 7), (1 6 4 3 2 5 7), (1 6 4 2 3 5 7), (1 6 3 4 2 5 7), (1 6 2 4 3 5 7), (1 6 3 2 4 5 7), (1 6 2 3 4 5 7), (1 5 6 4 3 2 7), (1 5 6 4 2 3 7), (1 5 6 3 4 2 7), (1 5 6 2 4 3 7), (1 5 6 3 2 4 7), (1 5 6 2 3 4 7), (1 4 6 5 3 2 7), (1 4 6 5 2 3 7), (1 3 6 5 4 2 7), (1 2 6 5 4 3 7), (1 3 6 5 2 4 7), (1 2 6 5 3 4 7), (1 4 6 3 5 2 7), (1 4 6 2 5 3 7), (1 3 6 4 5 2 7), (1 2 6 4 5 3 7), (1 3 6 2 5 4 7), (1 2 6 3 5 4 7), (1 4 6 3 2 5 7), (1 4 6 2 3 5 7), (1 3 6 4 2 5 7), (1 2 6 4 3 5 7), (1 3 6 2 4 5 7), (1 2 6 3 4 5 7), (1 5 4 6 3 2 7), (1 5 4 6 2 3 7), (1 5 3 6 4 2 7), (1 5 2 6 4 3 7), (1 5 3 6 2 4 7), (1 5 2 6 3 4 7), (1 4 5 6 3 2 7), (1 4 5 6 2 3 7), (1 3 5 6 4 2 7), (1 2 5 6 4 3 7), (1 3 5 6 2 4 7), (1 2 5 6 3 4 7), (1 4 3 6 5 2 7), (1 4 2 6 5 3 7), (1 3 4 6 5 2 7), (1 2 4 6 5 3 7), (1 3 2 6 5 4 7), (1 2 3 6 5 4 7), (1 4 3 6 2 5 7), (1 4 2 6 3 5 7), (1 3 4 6 2 5 7), (1 2 4 6 3 5 7), (1 3 2 6 4 5 7), (1 2 3 6 4 5 7), (1 5 4 3 6 2 7), (1 5 4 2 6 3 7), (1 5 3 4 6 2 7), (1 5 2 4 6 3 7), (1 5 3 2 6 4 7), (1 5 2 3 6 4 7), (1 4 5 3 6 2 7), (1 4 5 2 6 3 7), (1 3 5 4 6 2 7), (1 2 5 4 6 3 7), (1 3 5 2 6 4 7), (1 2 5 3 6 4 7), (1 4 3 5 6 2 7), (1 4 2 5 6 3 7), (1 3 4 5 6 2 7), (1 2 4 5 6 3 7), (1 3 2 5 6 4 7), (1 2 3 5 6 4 7), (1 4 3 2 6 5 7), (1 4 2 3 6 5 7), (1 3 4 2 6 5 7), (1 2 4 3 6 5 7), (1 3 2 4 6 5 7), (1 2 3 4 6 5 7), (1 5 4 3 2 6 7), (1 5 4 2 3 6 7), (1 5 3 4 2 6 7), (1 5 2 4 3 6 7), (1 5 3 2 4 6 7), (1 5 2 3 4 6 7), (1 4 5 3 2 6 7), (1 4 5 2 3 6 7), (1 3 5 4 2 6 7), (1 2 5 4 3 6 7), (1 3 5 2 4 6 7), (1 2 5 3 4 6 7), (1 4 3 5 2 6 7), (1 4 2 5 3 6 7), (1 3 4 5 2 6 7), (1 2 4 5 3 6 7), (1 3 2 5 4 6 7), (1 2 3 5 4 6 7), (1 4 3 2 5 6 7), (1 4 2 3 5 6 7), (1 3 4 2 5 6 7), (1 2 4 3 5 6 7), (1 3 2 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 20:

1. Group Size is 8.
2. Elements are : (1 4 5 2 3 7 6), (1 3 5 2 4 7 6), (1 4 2 5 3 7 6), (1 3 2 5 4 7 6), (1 5 4 3 2 6 7), (1 5 3 4 2 6 7), (1 2 4 3 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 21:

1. Group Size is 72.
2. Elements are : (1 7 5 4 3 6 2), (1 7 5 3 4 6 2), (1 7 4 5 3 6 2), (1 7 3 5 4 6 2), (1 7 4 3 5 6 2), (1 7 3 4 5 6 2), (1 7 5 4 3 2 6), (1 7 5 3 4 2 6), (1 7 4 5 3 2 6), (1 7 3 5 4 2 6), (1 7 4 3 5 2 6), (1 7 3 4 5 2 6), (1 5 7 6 2 4 3), (1 5 7 6 2 3 4), (1 4 7 6 2 5 3), (1 3 7 6 2 5 4), (1 4 7 6 2 3 5), (1 3 7 6 2 4 5), (1 5 7 2 6 4 3), (1 5 7 2 6 3 4), (1 4 7 2 6 5 3), (1 3 7 2 6 5 4), (1 4 7 2 6 3 5), (1 3 7 2 6 4 5), (1 5 6 7 2 4 3), (1 5 6 7 2 3 4), (1 4 6 7 2 5 3), (1 3 6 7 2 5 4), (1 4 6 7 2 3 5), (1 3 6 7 2 4 5), (1 5 2 7 6 4 3), (1 5 2 7 6 3 4), (1 4 2 7 6 5 3), (1 3 2 7 6 5 4), (1 4 2 7 6 3 5), (1 3 2 7 6 4 5), (1 5 6 2 7 4 3), (1 5 6 2 7 3 4), (1 4 6 2 7 5 3), (1 3 6 2 7 5 4), (1 4 6 2 7 3 5), (1 3 6 2 7 4 5), (1 5 2 6 7 4 3), (1 5 2 6 7 3 4), (1 4 2 6 7 5 3), (1 3 2 6 7 5 4), (1 4 2 6 7 3 5), (1 3 2 6 7 4 5), (1 6 5 4 3 7 2), (1 6 5 3 4 7 2), (1 6 4 5 3 7 2), (1 6 3 5 4 7 2), (1 6 4 3 5 7 2), (1 6 3 4 5 7 2), (1 2 5 4 3 7 6), (1 2 5 3 4 7 6), (1 2 4 5 3 7 6), (1 2 3 5 4 7 6), (1 2 4 3 5 7 6), (1 2 3 4 5 7 6), (1 6 5 4 3 2 7), (1 6 5 3 4 2 7), (1 6 4 5 3 2 7), (1 6 3 5 4 2 7), (1 6 4 3 5 2 7), (1 6 3 4 5 2 7), (1 2 5 4 3 6 7), (1 2 5 3 4 6 7), (1 2 4 5 3 6 7), (1 2 3 5 4 6 7), (1 2 4 3 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 22:

1. Group Size is 2.
2. Elements are : (4 2 7 1 6 5 3), (1 2 3 4 5 6 7)

Invariant group of Orbit 23:

1. Group Size is 14.
2. Elements are : (7 6 5 4 3 2 1), (7 5 6 3 4 1 2), (6 7 4 5 2 3 1), (5 7 3 6 1 4 2), (6 4 7 2 5 1 3), (5 3 7 1 6 2 4), (4 6 2 7 1 5 3), (3 5 1 7 2 6 4), (4 2 6 1 7 3 5), (3 1 5 2 7 4 6), (2 4 1 6 3 7 5), (1 3 2 5 4 7 6), (2 1 4 3 6 5 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 24:

1. Group Size is 2.
2. Elements are : (4 2 7 1 6 5 3), (1 2 3 4 5 6 7)

Invariant group of Orbit 25:

1. Group Size is 8.
2. Elements are : (1 5 4 3 2 7 6), (1 5 4 2 3 7 6), (1 4 5 3 2 7 6), (1 4 5 2 3 7 6), (1 3 2 5 4 6 7), (1 2 3 5 4 6 7), (1 3 2 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 26:

1. Group Size is 2.
2. Elements are : (1 3 2 5 4 7 6), (1 2 3 4 5 6 7)

Invariant group of Orbit 27:

1. Group Size is 4.
2. Elements are : (1 6 4 3 5 2 7), (1 6 3 4 5 2 7), (1 2 4 3 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 28:

1. Group Size is 2.
2. Elements are : (1 3 2 4 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 29:

1. Group Size is 2.
2. Elements are : (1 2 4 3 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 30:

1. Group Size is 12.
2. Elements are : (1 6 5 4 3 2 7), (1 6 5 3 4 2 7), (1 6 4 5 3 2 7), (1 6 3 5 4 2 7), (1 6 4 3 5 2 7), (1 6 3 4 5 2 7), (1 2 5 4 3 6 7), (1 2 5 3 4 6 7), (1 2 4 5 3 6 7), (1 2 3 5 4 6 7), (1 2 4 3 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 31:

1. Group Size is 2.

2. Elements are : (4 5 6 1 2 3 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 32:

1. Group Size is 2.
2. Elements are : (1 3 2 5 4 7 6), (1 2 3 4 5 6 7)

Invariant group of Orbit 33:

1. Group Size is 2.
2. Elements are : (1 2 4 3 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 34:

1. Group Size is 4.
2. Elements are : (1 6 3 5 4 2 7), (1 6 3 4 5 2 7), (1 2 3 5 4 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 35:

1. Group Size is 4.
2. Elements are : (1 2 4 3 5 7 6), (1 2 3 4 5 7 6), (1 2 4 3 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 36:

1. Group Size is 8.
2. Elements are : (1 4 5 2 3 7 6), (1 3 5 2 4 7 6), (1 4 2 5 3 7 6), (1 3 2 5 4 7 6), (1 5 4 3 2 6 7), (1 5 3 4 2 6 7), (1 2 4 3 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 37:

1. Group Size is 8.
2. Elements are : (1 4 6 2 7 3 5), (1 3 6 2 7 4 5), (1 4 2 6 7 3 5), (1 3 2 6 7 4 5), (1 6 4 3 5 2 7), (1 6 3 4 5 2 7), (1 2 4 3 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 38:

1. Group Size is 2.
2. Elements are : (1 3 2 5 4 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 40:

1. Group Size is 2.
2. Elements are : (1 2 3 5 4 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 41:

1. Group Size is 4.
2. Elements are : (1 2 4 3 6 5 7), (1 2 3 4 6 5 7), (1 2 4 3 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 42:

1. Group Size is 4.
2. Elements are : (1 2 3 5 4 7 6), (1 2 3 4 5 7 6), (1 2 3 5 4 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 43:

1. Group Size is 2.
2. Elements are : (1 3 2 5 4 7 6), (1 2 3 4 5 6 7)

Invariant group of Orbit 44:

1. Group Size is 2.
2. Elements are : (1 2 4 3 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 45:

1. Group Size is 2.
2. Elements are : (1 2 4 3 5 6 7), (1 2 3 4 5 6 7)

Invariant group of Orbit 46:

1. Group Size is 20.
2. Elements are : (7 6 5 4 3 2 1), (7 6 4 5 2 3 1), (7 5 6 3 4 2 1), (7 4 6 2 5 3 1), (7 5 3 6 2 4 1), (7 4 2 6 3 5 1), (7 3 5 2 6 4 1), (7 2 4 3 6 5 1), (7 3 2 5 4 6 1), (7 2 3 4 5 6 1), (1 6 5 4 3 2 7), (1 6 4 5 2 3 7), (1 5 6 3 4 2 7), (1 4 6 2 5 3 7), (1 5 3 6 2 4 7), (1 4 2 6 3 5 7), (1 3 5 2 6 4 7), (1 2 4 3 6 5 7), (1 3 2 5 4 6 7), (1 2 3 4 5 6 7)

2 The intrisic informations concerning the graph of facet rays of MET7.ine

The graph considered is made of 105 elements.
The group acting on MET7.ine is ReprS7
Under the group action we have in fact only 1 orbits to consider.
The diameter of the graph is 2.
The list of orbits is with adjacency and Size info:

F1: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 -1 1 1 | 86 | 105

The representation matrix is:

	F1	Adj.	Size
F1	86	86	105
Size	105		105

No complemented local graph of size inferior to 20.

2.1 scalar product between elements of orbits

This subsection made sense only if the representation is orthogonal which is the usual case Considering Orbit 1

1. Orbit Size is 105.
2. Norm of elements is 3.
3. Possible scalar product : -1, 0, 1

2.2 invariant group of Orbits

The invariant group of x is the set of g such that $g(x) = x$ denoted by G_x.
If x and y are in the same orbit then the groups G_x and G_y are conjuguate.
For any element x we denote O_x its Orbit, we have $|O_x| \times |G_x| = |G|$ We print only nontrivial groups
Invariant group of Orbit 1:

1. Group Size is 48.

2. Elements are : (4 3 2 1 6 5 7), (4 3 1 2 6 5 7), (4 2 3 1 6 5 7), (4 1 3 2 6 5 7), (4 2 1 3 6 5 7), (4 1 2 3 6 5 7), (3 4 2 1 6 5 7), (3 4 1 2 6 5 7), (2 4 3 1 6 5 7), (1 4 3 2 6 5 7), (2 4 1 3 6 5 7), (1 4 2 3 6 5 7), (3 2 4 1 6 5 7), (3 1 4 2 6 5 7), (2 3 4 1 6 5 7), (1 3 4 2 6 5 7), (2 1 4 3 6 5 7), (1 2 4 3 6 5 7), (3 2 1 4 6 5 7), (3 1 2 4 6 5 7), (2 3 1 4 6 5 7), (1 3 2 4 6 5 7), (2 1 3 4 6 5 7), (1 2 3 4 6 5 7), (4 3 2 1 5 6 7), (4 3 1 2 5 6 7), (4 2 3 1 5 6 7), (4 1 3 2 5 6 7), (4 2 1 3 5 6 7), (4 1 2 3 5 6 7), (3 4 2 1 5 6 7), (3 4 1 2 5 6 7), (2 4 3 1 5 6 7), (1 4 3 2 5 6 7), (2 4 1 3 5 6 7), (1 4 2 3 5 6 7), (3 2 4 1 5 6 7), (3 1 4 2 5 6 7), (2 3 4 1 5 6 7), (1 3 4 2 5 6 7), (2 1 4 3 5 6 7), (1 2 4 3 5 6 7), (3 2 1 4 5 6 7), (3 1 2 4 5 6 7), (2 3 1 4 5 6 7), (1 3 2 4 5 6 7), (2 1 3 4 5 6 7), (1 2 3 4 5 6 7)

3 The two incidence matrix

Incidence between Orbit of Extreme rays and Orbits of Facets

	$F1$	Inc
$E1$	90	90
$E2$	80	80
$E3$	75	75
$E4$	44	44
$E5$	48	48
$E6$	37	37
$E7$	43	43
$E8$	41	41
$E9$	30	30
$E10$	46	46
$E11$	36	36
$E12$	30	30
$E13$	37	37
$E14$	37	37
$E15$	33	33
$E16$	30	30
$E17$	29	29
$E18$	29	29
$E19$	25	25
$E20$	24	24
$E21$	24	24
$E22$	27	27
$E23$	21	21
$E24$	25	25
$E25$	28	28
$E26$	21	21
$E27$	21	21
$E28$	26	26
$E29$	22	22
$E30$	22	22
$E31$	25	25
$E32$	21	21
$E33$	24	24
$E34$	21	21
$E35$	24	24
$E36$	24	24
$E37$	21	21
$E38$	24	24
$E39$	22	22
$E40$	22	22
$E41$	22	22
$E42$	22	22
$E43$	21	21
$E44$	20	20
$E45$	20	20
$E46$	20	20