The Cone OMCUT3-QMET3

17th September 2003

1 The intrisic informations concerning the graph of extreme rays of OMCUT3-QMET3.ext

The graph considered is made of 12 elements.
The group acting on OMCUT3-QMET3.ext is ReprS3revers
Under the group action we have in fact only 2 orbits to consider.
The diameter of the graph is 2.
The list of orbits is with adjacency and Size info:

E1:	0	0	0	0	1	1	9	6
E2:	0	0	1	0	1	1	6	6

The representation matrix is:

	E1	E2	Adj.	Size
E1	5	4	9	6
E2	4	2	6	6
Size	6	6		12

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 1 is:

1	1	:	5
2	4	:	4 5 6 7
3	4	:	5 6 8 9
4	2	:	2 6
5	4	:	1 2 3 8
6	4	:	2 3 4 9
7	1	:	2
8	2	:	3 5
9	2	:	3 6

The complemented local graph for orbit 2 is:

1	1	:	2
2	2	:	1 5
3	1	:	4
4	2	:	3 6
5	1	:	2
6	1	:	4

1.2 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 6.
2. Norm of elements is 2.
3. Possible scalar product : 0, 1

Considering Orbit 2

1. Orbit Size is 6.
2. Norm of elements is 3.
3. Possible scalar product : 0, 1, 2

1.3 invariant group of Orbits

The invariant group of x is the set of g such that g(x)=x denoted b G_x.
If x and y are in the same orbit then the groups G_x and G_x are conjuguate.
Invariant group of Orbit 1

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

Invariant group of Orbit 2

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

2 The intrisic informations concerning the graph of facet rays of OMCUT3-QMET3.ine

The graph considered is made of 12 elements.
The group acting on OMCUT3-QMET3.ine is ReprS3revers
Under the group action we have in fact only 2 orbits to consider.
The diameter of the graph is 2.
The list of orbits is with adjacency and Size info:

F1:	-1	1	0	0	0	1	8	6
F2:	0	0	0	0	0	1	7	6

The representation matrix is:

	F1	F2	Adj.	Size
F1	3	5	8	6
F2	5	2	7	6
Size	6	6		12

2.1 The local graphs

The complemented local graph are:
We consider graph with cardinal inferior or equal to 20
The complemented local graph for orbit 1 is:

1	3	:	2 3 5
2	2	:	1 6
3	2	:	1 7
4	3	:	5 7 8
5	3	:	1 4 8
6	3	:	2 7 8
7	3	:	3 4 6
8	3	:	4 5 6

The complemented local graph for orbit 2 is:

1	2	:	2 6
2	2	:	1 4
3	2	:	4 5
4	2	:	2 3
5	2	:	3 7
6	2	:	1 7
7	2	:	5 6

2.2 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 6.
2. Norm of elements is 3.
3. Possible scalar product : -2, 0, 1

Considering Orbit 2

1. Orbit Size is 6.
2. Norm of elements is 1.
3. Possible scalar product : 0

2.3 invariant group of Orbits

The invariant group of x is the set of g such that g(x)=x denoted b G_x.
If x and y are in the same orbit then the groups G_x and G_x are conjuguate.
Invariant group of Orbit 1

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

Invariant group of Orbit 2

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

3 The two incidence matrix

Incidence between Orbit of Extreme rays and Orbits of Facets

	$F1$	$F2$	Inc
$E1$	4	4	8
$E2$	3	3	6

Incidence between Orbits of Facets and Orbits of Extreme Rays

	$E1$	$E2$	Inc
$F1$	4	3	7
$F2$	4	3	7