The Cone CUT3

13th January 2002

1 The intrisic informations concerning the graph of extreme rays of CUT3.ext

The graph considered is made of 3 elements.
The group acting on CUT3.ext is ReprS3
Under the group action we have in fact only 1 orbits to consider.
The diameter of the graph is 1.
The list of orbits is with adjacency and Size info:

E1: 0 1 1 | 2 | 3

The representation matrix is:

	E1	Adj.	Size
E1	2	2	3
Size	3		3

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:

$$\begin{array}{ccc} 1 & 0 & : \\ 2 & 0 & : \end{array}$$

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 3.
2. Norm of elements is 2.
3. Possible scalar product : 1

1.3 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 2.
2. Elements are : (2 1 3), (1 2 3)

2 The intrisic informations concerning the graph of facet rays of CUT3.ine

The graph considered is made of 3 elements.
The group acting on CUT3.ine is ReprS3
Under the group action we have in fact only 1 orbits to consider.
The diameter of the graph is 1.
The list of orbits is with adjacency and Size info:

F1: -1 1 1 | 2 | 3

The representation matrix is:

	F1	Adj.	Size
F1	2	2	3
Size	3		3

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 0 :
2 0 :

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 3.
2. Norm of elements is 3.
3. Possible scalar product : -1

2.3 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 2.
2. Elements are : (2 1 3), (1 2 3)

3 The two incidence matrix

Incidence between Orbit of Extreme rays and Orbits of Facets

	$F1$	Inc
$E1$	2	2

Incidence between Orbits of Facets and Orbits of Extreme Rays

	$E1$	Inc
$F1$	2	2