We introduce the structure constants of sl2
We show the Killing-Cartan metric

```
 -8.00 0.00 0.00
 0.00 8.00 0.00
 0.00 0.00 8.00
```

and its determinant
-512.0

In what follows we expand sl2 with all the abelian semigroups of order 6 having
a resonance; and identify the ones that leads to a semisimple algebra.
****

A semisimple algebra has been found, expanding with the semigroup #12097
```
1 1 1 1 1 1
1 2 1 1 1 6
1 1 3 3 3 1
1 1 3 4 5 1
1 1 3 5 4 1
1 6 1 1 1 2
```
whith the resonance:
S0: 1 2 3 4
S1: 1 3 5 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00  -8.00  -8.00  -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00  -8.00  -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00  -8.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00  -8.00 -16.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 16.00 8.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 24.00 8.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 8.00 8.00 16.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 16.00
```

and its determinant
6.8719476736E10
****
A semisimple algebra has been found, expanding with the semigroup #12151
```
1 1 1 1 1 1
1 2 1 1 2 2
1 1 3 1 3 3
1 1 1 4 4 4
1 2 3 4 5 6
1 2 3 4 6 5
```
whith the resonance:
S0: 1 2 3 4 5
S1: 1 2 3 4 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -8.00 -8.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -8.00 -16.00 -8.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -8.00 -8.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -16.00 -40.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 8.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 8.00 8.00 16.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 8.00 16.00 8.00 16.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 16.00 16.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00 40.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 8.00 8.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 16.00 8.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 16.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00 40.00
```

and its determinant
-3.5184372088832E13
****
A semisimple algebra has been found, expanding with the semigroup #12218
1 1 1 1 1 1
1 2 1 1 2 2
1 1 3 3 3 3
1 1 3 4 4 4
1 2 3 4 5 6
1 2 3 4 6 5
whith the resonance:
S0: 1 2 3 4 5
S1: 1 2 3 4 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -8.00 -8.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -8.00 -16.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -8.00 -16.00 -24.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -24.00 -40.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 8.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 8.00 8.00 16.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 8.00 16.00 16.00 16.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 8.00 16.00 24.00 24.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 24.00 40.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 8.00 8.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 16.00 16.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 16.00 24.00 24.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 24.00 40.00
```

and its determinant
-3.5184372088832E13
****
A semisimple algebra has been found, expanding with the semigroup #12262
1 1 1 1 1 1
1 2 1 1 2 2
1 1 3 4 3 4
1 1 4 3 4 3
1 2 3 4 5 6
1 2 4 3 6 5
whith the resonance:
S0: 1 2 3 5
S1: 1 2 4 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -8.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -8.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -32.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 8.00 16.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 8.00 16.00 16.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 16.00 32.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 8.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 16.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 32.00
```

and its determinant
6.8719476736E10
****
A semisimple algebra has been found, expanding with the semigroup #12400
1 1 1 1 1 1
1 2 1 2 2 2
1 1 3 3 3 3
1 2 3 4 4 4
1 2 3 4 5 6
1 2 3 4 6 5
whith the resonance:
S0: 1 2 3 4 5
S1: 1 2 3 4 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -8.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -8.00 -16.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -32.00 -32.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -32.00 -40.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 8.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 8.00 16.00 16.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 8.00 16.00 16.00 16.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 32.00 32.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 32.00 40.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 8.00 16.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 16.00 16.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 32.00 32.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 32.00 40.00
```

and its determinant
-3.5184372088832E13
****
A semisimple algebra has been found, expanding with the semigroup #13679
1 1 1 1 1 1
1 2 2 2 2 2
1 2 3 2 2 6
1 2 2 4 5 2
1 2 2 5 4 2
1 2 6 2 2 3
whith the resonance:
S0: 1 2 3 4
S1: 1 2 5 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -24.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 24.00 16.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 16.00 24.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 24.00
```

and its determinant
6.8719476736E10
****
A semisimple algebra has been found, expanding with the semigroup #13688
1 1 1 1 1 1
1 2 2 2 2 2
1 2 3 2 3 3
1 2 2 4 4 4
1 2 3 4 5 6
1 2 3 4 6 5
whith the resonance:
S0: 1 2 3 4 5
S1: 1 2 3 4 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -24.00 -16.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -24.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -24.00 -24.00 -40.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 8.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00 16.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 16.00 24.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 24.00 24.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 24.00 40.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 16.00 24.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 24.00 24.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 24.00 40.00
```

and its determinant
-3.5184372088832E13
****
A semisimple algebra has been found, expanding with the semigroup #13831
1 1 1 1 1 1
1 2 2 2 2 2
1 2 3 3 3 3
1 2 3 4 4 4
1 2 3 4 5 6
1 2 3 4 6 5
whith the resonance:
S0: 1 2 3 4 5
S1: 1 2 3 4 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -24.00 -24.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -24.00 -32.00 -32.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -24.00 -32.00 -40.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 8.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00 16.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 24.00 24.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 32.00 32.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 32.00 40.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 24.00 24.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 32.00 32.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 32.00 40.00
```
and its determinant
-3.5184372088832E13
****
A semisimple algebra has been found, expanding with the semigroup #13877
1 1 1 1 1 1
1 2 2 2 2 2
1 2 3 3 5 5
1 2 3 4 5 6
1 2 5 5 3 3
1 2 5 6 3 4
whith the resonance:
S0: 1 2 3 4
S1: 1 2 5 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -24.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -24.00 -32.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 24.00 24.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 24.00 32.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 24.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00 32.00
```

and its determinant
6.8719476736E10
****
A semisimple algebra has been found, expanding with the semigroup #13899
1 1 1 1 1 1
1 2 2 2 2 2
1 2 3 4 5 6
1 2 4 3 6 5
1 2 5 6 3 4
1 2 6 5 4 3
whith the resonance:
S0: 1 2 3 6
S1: 1 2 4 5
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -32.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -32.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 32.00 16.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 16.00 32.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 32.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 32.00
```

and its determinant
4.398046511104E12
****
A semisimple algebra has been found, expanding with the semigroup #13900
1 1 1 1 1 1
1 2 2 2 2 2
1 2 3 4 5 6
1 2 4 3 6 5
1 2 5 6 4 3
1 2 6 5 3 4
whith the resonance:
S0: 1 2 3 4
S1: 1 2 5 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -32.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 -32.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 16.00 32.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 8.00 16.00 32.00 16.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00 32.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 32.00 16.00
```

and its determinant
4.398046511104E12
****
A semisimple algebra has been found, expanding with the semigroup #14212
1 1 1 1 1 1
1 2 2 2 5 6
1 2 3 4 5 6
1 2 4 3 5 6
1 5 5 5 6 2
1 6 6 6 2 5
whith the resonance:
S0: 1 2 3 5 6
S1: 1 2 4 5 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -32.00 -32.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -32.00 -40.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -8.00 -8.00 -8.00 -32.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -8.00 -8.00 -32.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 8.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 32.00 32.00 8.00 8.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 32.00 40.00 8.00 8.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 32.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 32.00 8.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 32.00 32.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 32.00 40.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 8.00 32.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00 32.00 8.00
```

and its determinant
6.9253399582448026E17
****
A semisimple algebra has been found, expanding with the semigroup #14815
1 1 1 1 1 6
1 2 1 1 5 6
1 1 3 4 1 6
1 1 4 3 1 6
1 5 1 1 2 6
6 6 6 6 6 1
whith the resonance:
S0: 1 2 3 6
S1: 1 4 5 6
The metric of the reduction of the resonant subalgebra is:

```
 -16.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -16.00 -24.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -16.00 -16.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 16.00 16.00 16.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 16.00 24.00 16.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 16.00 16.00 24.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00 16.00 16.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00 24.00 16.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00 16.00 24.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00
```

and its determinant
4.398046511104E12
****
A semisimple algebra has been found, expanding with the semigroup #14937
1 1 1 1 1 6
1 2 2 4 4 6
1 2 3 4 5 6
1 4 4 2 2 6
1 4 5 2 3 6
6 6 6 6 6 1
whith the resonance:
S0: 1 2 3 6
S1: 1 4 5 6
The metric of the reduction of the resonant subalgebra is:

```
 -16.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -16.00 -24.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -16.00 -24.00 -32.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
  0.00 0.00 0.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
  0.00 0.00 0.00 0.00 16.00 16.00 16.00 0.00 0.00 0.00 0.00 0.00
  0.00 0.00 0.00 0.00 16.00 24.00 24.00 0.00 0.00 0.00 0.00 0.00
  0.00 0.00 0.00 0.00 16.00 24.00 32.00 0.00 0.00 0.00 0.00 0.00
  0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00 0.00 0.00 0.00 0.00
  0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00 16.00 16.00 0.00
  0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00 24.00 24.00 0.00
  0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00 24.00 32.00 0.00
  0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00
```

and its determinant
4.398046511104E12
****
A semisimple algebra has been found, expanding with the semigroup #14944
1 1 1 1 1 6
1 2 3 4 5 6
1 3 2 5 4 6
1 4 5 2 3 6
1 5 4 3 2 6
6 6 6 6 6 1
whith the resonance:
S0: 1 2 5 6
S1: 1 3 4 6
The metric of the reduction of the resonant subalgebra is:

```
 -16.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -16.00 -32.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -16.00 -16.00 -32.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
  0.00 0.00 0.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
  0.00 0.00 0.00 0.00 16.00 16.00 16.00 0.00 0.00 0.00 0.00 0.00
  0.00 0.00 0.00 0.00 16.00 32.00 16.00 0.00 0.00 0.00 0.00 0.00
  0.00 0.00 0.00 0.00 16.00 16.00 32.00 0.00 0.00 0.00 0.00 0.00
  0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00 0.00 0.00 0.00 0.00
  0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00 16.00 16.00 0.00
  0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00 32.00 16.00 0.00
  0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00 16.00 32.00 0.00
  0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00
```

and its determinant
2.81474976710656E14
****
A semisimple algebra has been found, expanding with the semigroup #14945
1 1 1 1 1 6
1 2 3 4 5 6
1 3 2 5 4 6
1 4 5 3 2 6
1 5 4 2 3 6
6 6 6 6 6 1
whith the resonance:
S0: 1 2 3 6
S1: 1 4 5 6
The metric of the reduction of the resonant subalgebra is:

```
-16.00 -16.00 -16.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
-16.00 -32.00 -16.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
-16.00 -16.00 -32.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00 -16.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00   0.00 16.00 16.00 16.00  0.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00   0.00 16.00 16.00 32.00  0.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00   0.00 16.00 32.00 16.00  0.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00   0.00  0.00  0.00  0.00 16.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00   0.00  0.00  0.00  0.00  0.00 16.00 16.00 16.00  0.00
  0.00   0.00   0.00   0.00  0.00  0.00  0.00  0.00 16.00 16.00 32.00  0.00
  0.00   0.00   0.00   0.00  0.00  0.00  0.00  0.00 16.00 32.00 16.00  0.00
  0.00   0.00   0.00   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00 16.00
```

and its determinant
2.81474976710656E14
****
A semisimple algebra has been found, expanding with the semigroup #15448
1 1 1 1 5 6
1 2 2 2 5 6
1 2 3 4 5 6
1 2 4 3 5 6
5 5 5 5 6 1
6 6 6 6 1 5
whith the resonance:
S0: 1 2 3 5 6
S1: 1 2 4 5 6
The metric of the reduction of the resonant subalgebra is:

```
-24.00 -24.00 -24.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
-24.00 -32.00 -32.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
-24.00 -32.00 -40.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00   0.00 -24.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00 -24.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00   0.00  0.00 24.00 24.00 24.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00   0.00  0.00 24.00 32.00 32.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00   0.00  0.00 24.00 32.00 40.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00   0.00  0.00  0.00  0.00  0.00  0.00 24.00  0.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00   0.00  0.00  0.00  0.00  0.00 24.00  0.00  0.00  0.00  0.00  0.00  0.00
  0.00   0.00   0.00   0.00  0.00  0.00  0.00  0.00  0.00  0.00 24.00 24.00 24.00  0.00  0.00
  0.00   0.00   0.00   0.00  0.00  0.00  0.00  0.00  0.00  0.00 24.00 32.00 32.00  0.00  0.00
  0.00   0.00   0.00   0.00  0.00  0.00  0.00  0.00  0.00  0.00 24.00 32.00 40.00  0.00  0.00
  0.00   0.00   0.00   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00 24.00
  0.00   0.00   0.00   0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00 24.00  0.00
```

and its determinant
6.9253399582448026E17
****
A semisimple algebra has been found, expanding with the semigroup #15619
1 1 1 4 4 4
1 2 1 4 4 6
1 1 3 4 5 4
4 4 4 1 1 1
4 4 5 1 3 1
4 6 4 1 1 2
whith the resonance:
S0: 1 2 3
S1: 4 5 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -8.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 8.00 8.00 8.00 0.00 0.00 0.00
 0.00 0.00 0.00 8.00 16.00 8.00 0.00 0.00 0.00
 0.00 0.00 0.00 8.00 8.00 16.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 16.00
```

and its determinant
-1.34217728E8
****
A semisimple algebra has been found, expanding with the semigroup #15696
1 1 1 4 4 4
1 2 2 4 5 5
1 2 3 4 5 6
4 4 4 1 1 1
4 5 5 1 2 2
4 5 6 1 2 3
whith the resonance:
S0: 1 2 3
S1: 4 5 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -16.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 8.00 8.00 8.00 0.00 0.00 0.00
 0.00 0.00 0.00 8.00 16.00 16.00 0.00 0.00 0.00
 0.00 0.00 0.00 8.00 16.00 24.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 16.00
 0.00 0.00 0.00 0.00 0.00 0.00 8.00 16.00 24.00
```

and its determinant
-1.34217728E8
****
A semisimple algebra has been found, expanding with the semigroup #15725
1 1 1 4 4 4
1 2 3 4 5 6
1 3 2 4 6 5
4 4 4 1 1 1
4 5 6 1 2 3
4 6 5 1 3 2
whith the resonance:
S0: 1 2 3
S1: 4 5 6
The metric of the reduction of the resonant subalgebra is:

```
 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -24.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -8.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 8.00 8.00 8.00 0.00 0.00 0.00
 0.00 0.00 0.00 8.00 24.00 8.00 0.00 0.00 0.00
 0.00 0.00 0.00 8.00 8.00 24.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 8.00 24.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 24.00
```

and its determinant

```
-8.589934592E9
**********
A semisimple algebra has been found, expanding with the semigroup #15726
1 1 1 4 4 4
1 2 3 4 5 6
1 3 2 4 6 5
4 4 4 1 1 1
4 5 6 1 3 2
4 6 5 1 2 3
whith the resonance:
S0: 1 2 3
S1: 4 5 6
The metric of the reduction of the resonant subalgebra is:

 -8.00 -8.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -24.00 -8.00 0.00 0.00 0.00 0.00 0.00 0.00
 -8.00 -8.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 8.00 8.00 8.00 0.00 0.00 0.00
 0.00 0.00 0.00 8.00 8.00 24.00 0.00 0.00 0.00
 0.00 0.00 0.00 8.00 24.00 8.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 8.00
 0.00 0.00 0.00 0.00 0.00 0.00 8.00 8.00 24.00
 0.00 0.00 0.00 0.00 0.00 0.00 8.00 24.00 8.00

and its determinant
-8.589934592E9
**********
A semisimple algebra has been found, expanding with the semigroup #15947
1 1 3 3 5 6
1 2 3 4 5 6
3 3 1 1 6 5
3 4 1 2 6 5
5 5 6 6 1 3
6 6 5 5 3 1
whith the resonance:
S0: 1 2 6
S1: 3 4 5
The metric of the reduction of the resonant subalgebra is:

 -16.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 -16.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 -16.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 16.00 16.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 16.00 24.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 16.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 16.00 16.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 16.00 24.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 16.00

and its determinant
-8.589934592E9
**********
A semisimple algebra has been found, expanding with the semigroup #15972
1 2 3 4 5 6
2 1 4 3 6 5
3 4 5 6 1 2
4 3 6 5 2 1
5 6 1 2 3 4
6 5 2 1 4 3
whith the resonance:
S0: 1 3 5
```

```
S1: 2 4 6
The metric of the reduction of the resonant subalgebra is:

 -24.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 -24.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 24.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 24.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 24.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 24.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 24.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 24.00 0.00

and its determinant
2.641807540224E12
**********


There are 2059 semigroups of order 6 at least one resonant decomposition.
In total, there are 25512 different resonant decompositions.
And 23 of them leads to a semisimple algebra.
There are 0 semigroups having more than one resonance and
leading to semisimple algebras with all those resonances.
```