

We introduce the structure constants of \mathfrak{sl}_2
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 \mathfrak{sl}_2 with all the abelian semigroups of order 2 having zero element and a resonance; and identify the ones that leads to a semisimple algebra.

There are 0 semigroups of order 2 with zero element and at least one resonant decomposition.

In total, there are 0 different resonant decompositions.

And 0 of them leads to a semisimple algebra.

There are 0 semigroups with zero element, having more than one resonance and leading to semisimple algebras with all those resonances.