

. . .

Soham

July 2016

Definition. A lattice is the set

$$\{mz_1 + nz_2 : m, n \in \mathbb{Z}\}$$

for $z_1/z_2 \notin \mathbb{R}$.

Another way to put it is that $z = a + ib$ and $w = c + id$ generate a lattice iff (some matrices here).

For every lattice, we have the functions

$$g_2 : \Lambda \mapsto 60 \sum_{z \in \Lambda} z^{-4}$$

and

$$g_3 : \Lambda \mapsto 420 \sum_{z \in \Lambda} z^{-6}$$

which end up converging for some reason and completely determine the lattice. (Hard theorem, come back later.)