

$$\underline{\underline{S6}} \quad \mathbb{Z}_8 = \{0, 1, 2, 3, 4, 5, 6, 7\}, +_7, \cdot_7$$

Subgroups of $\mathbb{Z}_8$ are as follows:

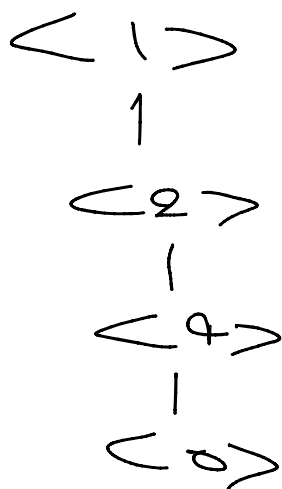
$$\langle 1 \rangle = \{0, 1, 2, 3, 4, 5, 6, 7\} = \mathbb{Z}_8$$

$$\langle 2 \rangle = \{0, 2, 4, 6\}$$

$$\langle 4 \rangle = \{0, 4\}$$

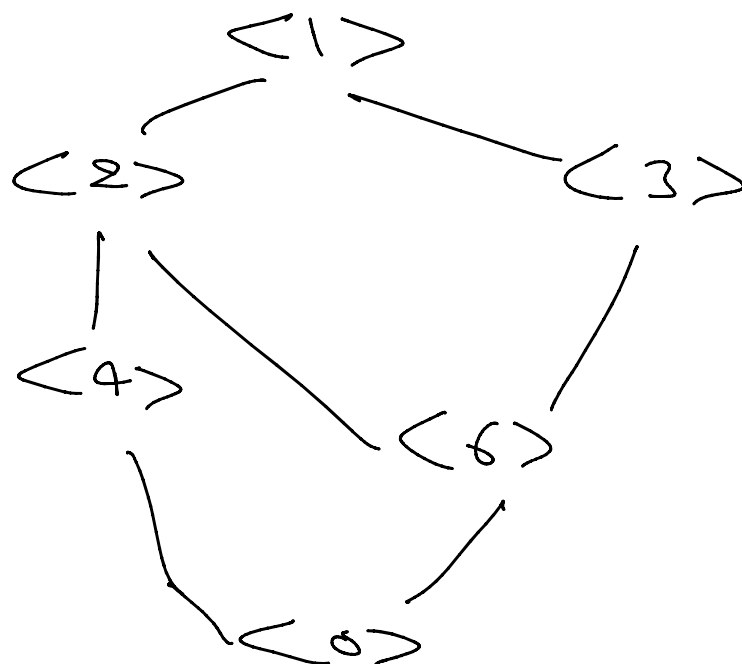
$$\langle 8 \rangle = \langle 0 \rangle = \{0\}.$$

Now, subgroup lattice for $\mathbb{Z}_8$ is as follows.



Q. Draw subgroup lattice for $\mathbb{Z}_{12}$.

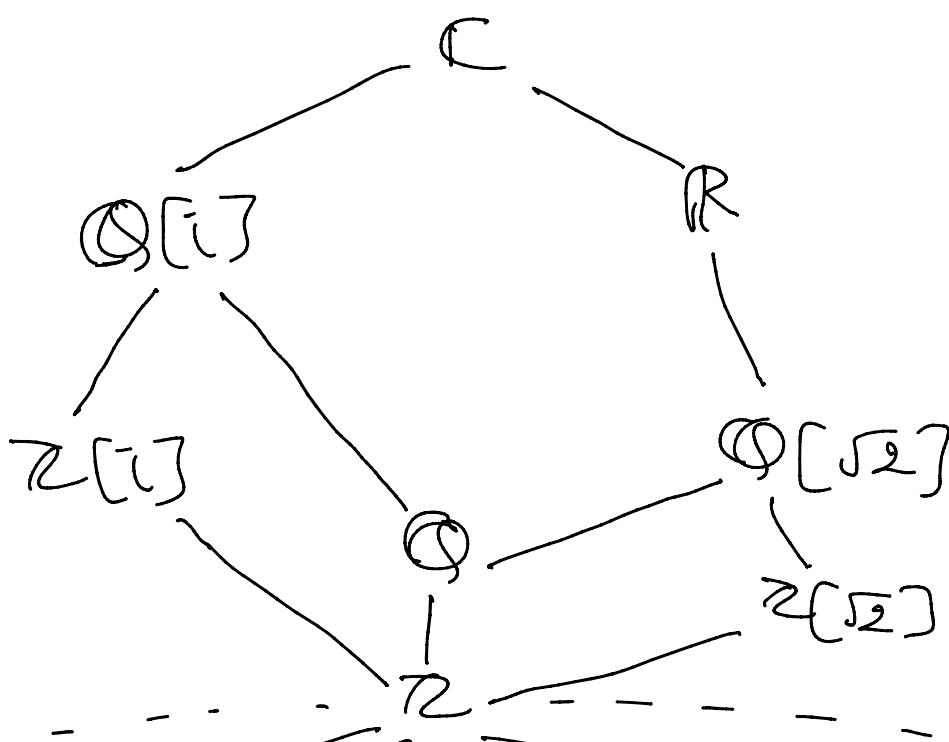
Sol

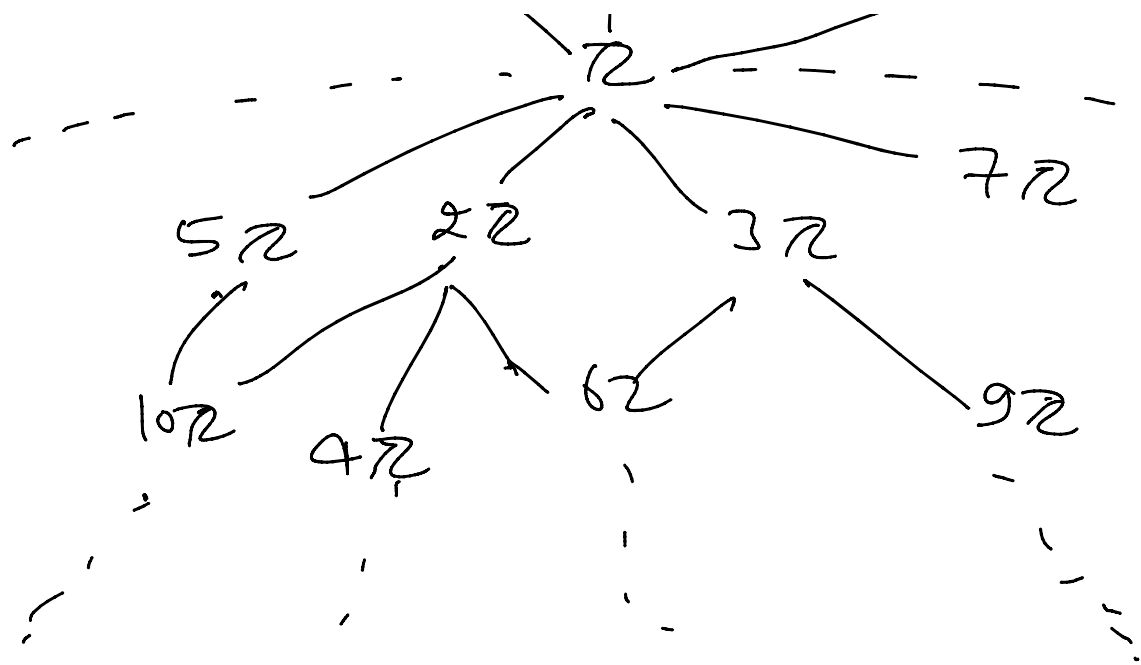


Sublattice for $\mathbb{Z}_6$.

Q. Draw Sublattice diagram for $\mathbb{C}$, where $\mathbb{C}$ is Set of Complex numbers.

Sol





Sublattice diagram of $\mathbb{C}$