

PROBLEM SET # 11
MATH 252

Due November 21.

1. Let $\text{Rep}(a, b, c)$ be the space of all representations of the quiver

$$\bullet \rightarrow \bullet \leftarrow \bullet$$

with dimension vector (a, b, c) . List all orbits in $\text{Rep}(a, b, c)$. Show that there is only one open orbit. Describe the open orbit O_X in terms of decomposition of X into direct sum of indecomposable representations.

2. Classify indecomposable representations of the quiver A_n with orientation:

$$\bullet \rightarrow \bullet \rightarrow \cdots \rightarrow \bullet.$$

You can use Gabriel's theorem.