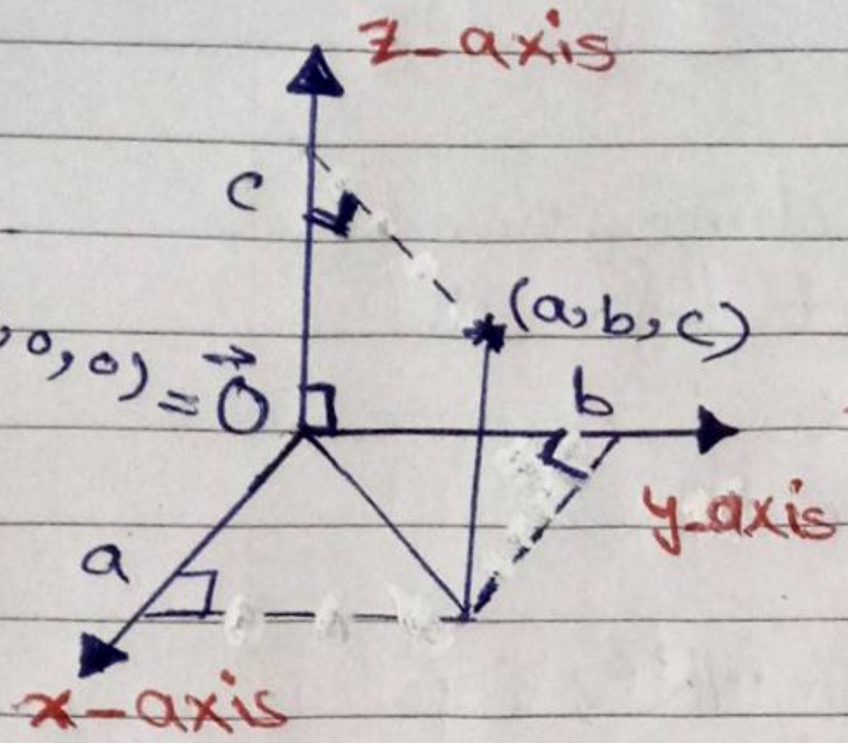

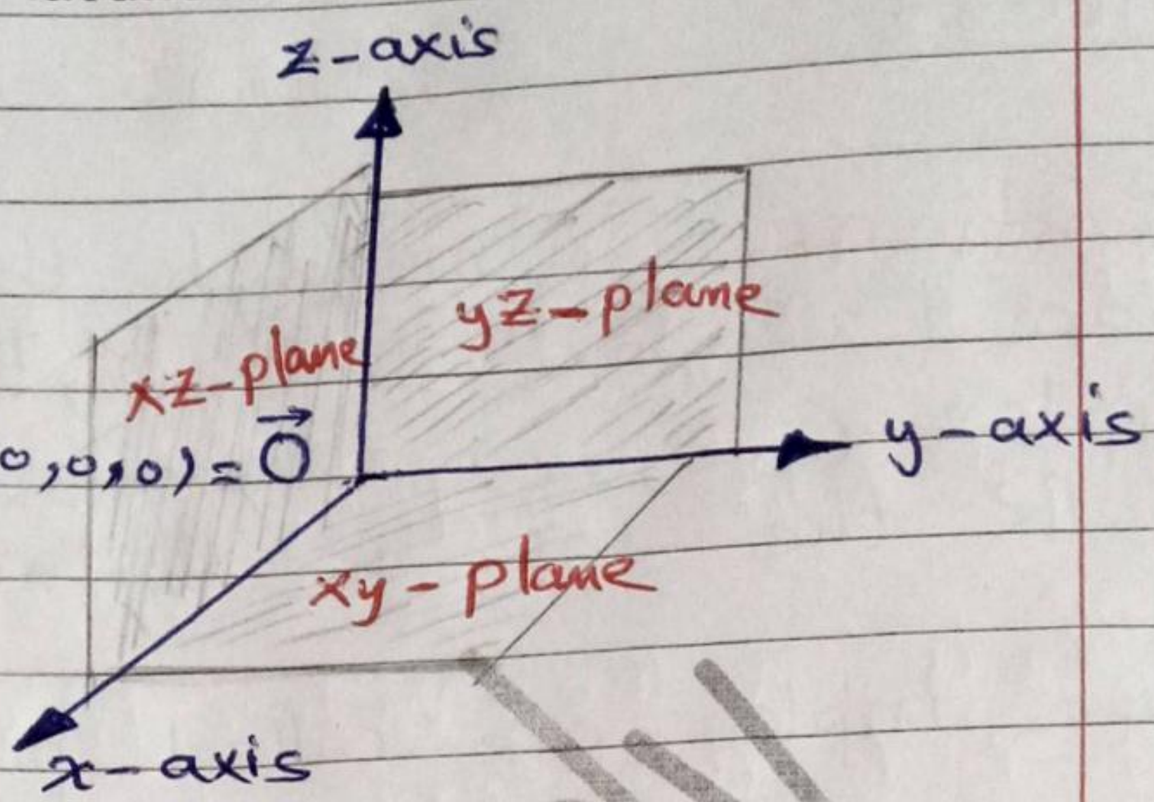

Definition: A (non-zero) vector is a directed line segment drawn from a point P_1 (called its initial point) to a point P_2 (called its terminal point), where P_1 and P_2 are distinct points, The vector that starts with P_1 and ends with P_2 is denoted by $\overrightarrow{P_1P_2}$. Its magnitude (value) is the length of the line segment, denoted by $\|\overrightarrow{P_1P_2}\|$ and its direction is the same as that of the directed line segment.

The zero vector is a vector that starts and ends at the same point i.e. its initial and terminal points are coincide, and it is denoted by $\vec{O}$.

Note: There is a difference between O (number) and $\vec{O}$ (vector).

The magnitude (value) of each vector $\overrightarrow{P_1P_2}$ is defined by the distance between P_1 and P_2.