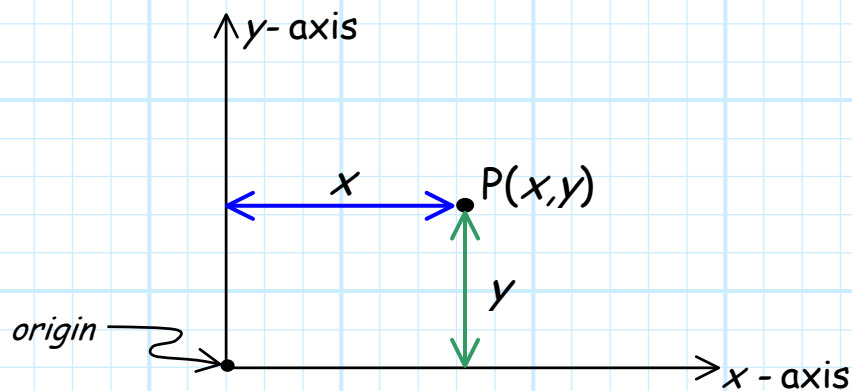
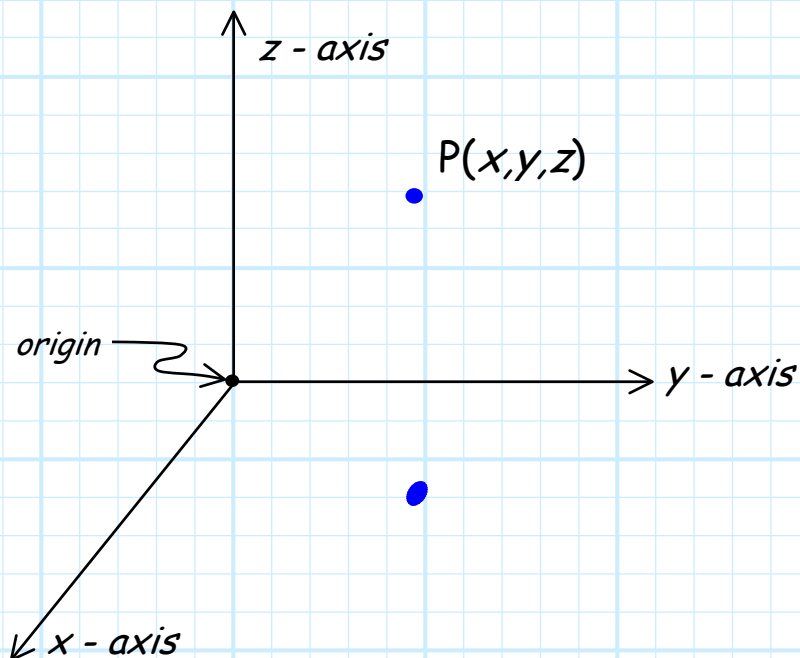


Cartesian Coordinates

You're probably familiar with **Cartesian coordinates**. In **two-dimensions**, we can specify a point on a plane using **two** scalar values, generally called x and y .



We can extend this to **three-dimensions**, by adding a **third** scalar value z .



Note the coordinate values in the Cartesian system effectively represent the **distance** from a **plane** intersecting the origin.

For **example**, $x=3$ means that the point is **3 units** from the y - z **plane** (i.e., the $x=0$ plane).

Likewise, the y coordinate provides the **distance** from the x - z ($y=0$) plane, and the z coordinate provides the **distance** from the x - y ($z=0$) plane.

Once **all three** distances are specified, the **position** of a point is **uniquely** identified.

