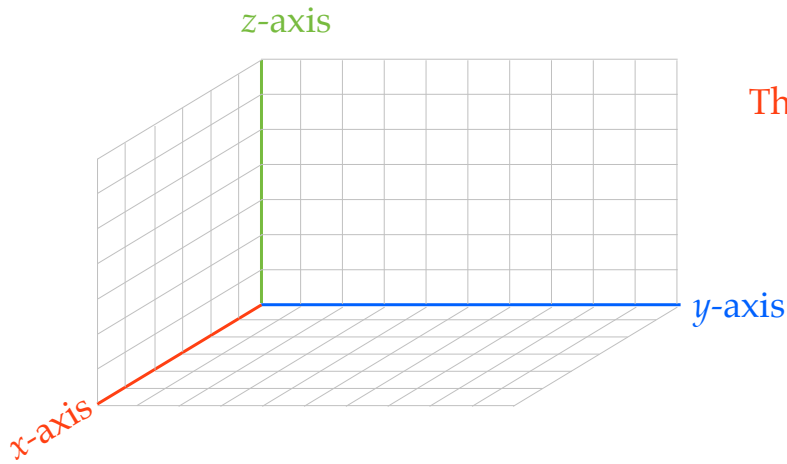


Three-Dimensional Coordinate Plane

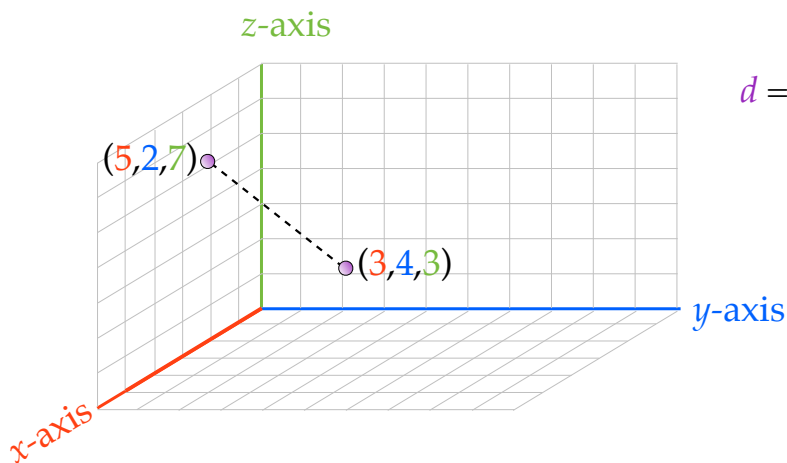


Plotting points in the
Three-Dimensional Coordinate Plane

$(3, 4, 3)$

$(5, 2, 7)$

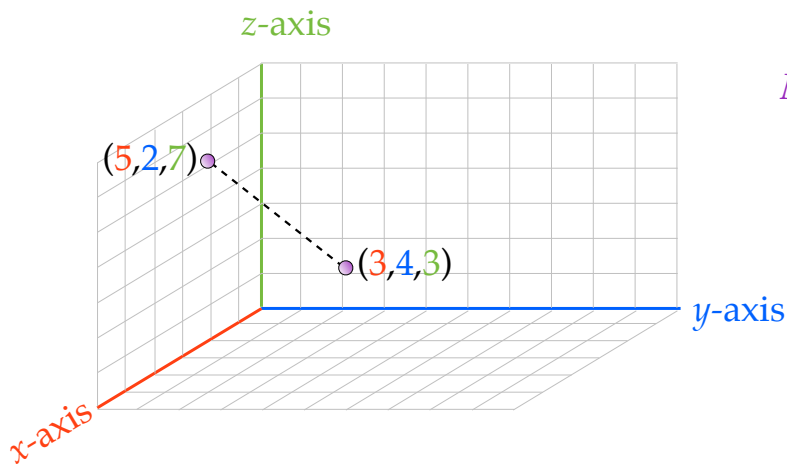
Three-Dimensional Coordinate Plane



Distance Formula

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$$

Three-Dimensional Coordinate Plane



Midpoint Formula

$$M = \left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2}, \frac{z_2 + z_1}{2} \right)$$

Three-Dimensional Coordinate Plane

Find the distance and midpoint between the following points.

$$\begin{array}{cc} (1, 6, 2) & (7, 2, 4) \\ (x_1, y_1, z_1) & (x_2, y_2, z_2) \end{array}$$

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2} \quad M = \left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2}, \frac{z_2 + z_1}{2} \right)$$

Three-Dimensional Coordinate Plane

Distance Formula

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$$

Midpoint Formula

$$M = \left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2}, \frac{z_2 + z_1}{2} \right)$$