- Distance formula finds the distance between two points
- Mid-point formula finds the point that is halfway between two points

Distance Formula

$$d = \sqrt{(x - x_1)^2 + (y - y_1)^2}$$

Example, find the distance between $(2,4)$ and $(5,10)$

$$d = \sqrt{(x - x_1)^2 + (y - y_1)^2}$$

$x = 2$, $x_1 = 5$, $y = 4$, $y_1 = 10$

$$d = \sqrt{(2-5)^2 + (4-10)^2}$$

$$= \sqrt{(-3)^2 + (-6)^2}$$

$$= \sqrt{9 + 36}$$

$$d = \sqrt{45} \approx 6.70$$