

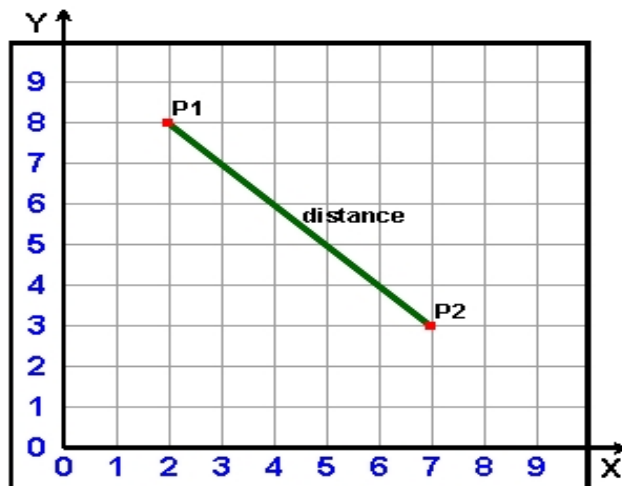
# Pythagorean Theorem

The Distance Formula is a variant of the Pythagorean Theorem.

You may calculate the distance between two points using the the Distance Formula.

**The Distance Formula:** Given the two points P1 ( $x_1, y_1$ ) and P2 ( $x_2, y_2$ ), the distance between these points is given by the formula:

$$\text{distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$



$$P_1 = (x_1, y_1) \quad P_2 = (x_2, y_2)$$

$$P_1 = (2, 8) \quad P_2 = (7, 3)$$

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

$$d = \sqrt{(7 - 2)^2 + (3 - 8)^2}$$

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

$$d = \sqrt{25 + 25}$$

$$d = \sqrt{50}$$

$$d \approx 7.0711$$