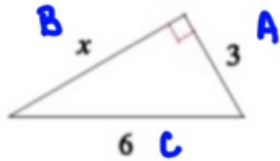


Practice



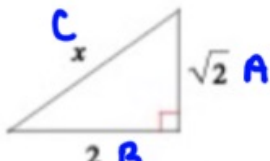
$$A^2 + B^2 = C^2$$

$$x = 3\sqrt{3}$$

$$(3)^2 + (x)^2 = (6)^2$$

$$\begin{array}{r} 9 + x^2 = 36 \\ -9 \quad -9 \\ \hline \sqrt{x^2} = \sqrt{27} \end{array}$$

$$\begin{array}{c} \wedge \\ 9 \quad 3 \\ \wedge \\ \textcircled{3 \quad 3} \end{array}$$



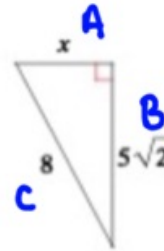
$$A^2 + B^2 = C^2$$

$$x = \sqrt{6}$$

$$(\sqrt{2})^2 + (2)^2 = (x)^2$$

$$2 + 4 = x^2$$

$$\sqrt{6} = \sqrt{x^2}$$



$$A^2 + B^2 = C^2$$

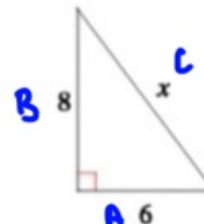
$$x = \sqrt{14}$$

$$(x)^2 + (5\sqrt{2})^2 = (8)^2$$

$$x^2 + 25 \cdot 2 = 64$$

$$x^2 + 50 = 64$$

$$\begin{array}{r} x^2 + 50 = 64 \\ -50 \quad -50 \\ \hline \sqrt{x^2} = \sqrt{14} \end{array}$$



$$A^2 + B^2 = C^2$$

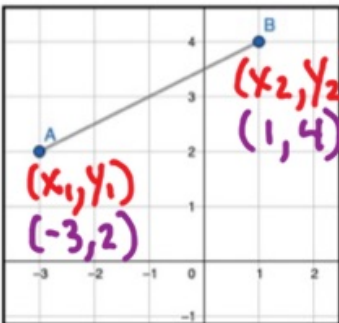
$$(6)^2 + (8)^2 = (x)^2$$

$$36 + 64 = x^2$$

$$\sqrt{100} = \sqrt{x^2}$$

$$x = 10$$

Practice



(x_1, y_1)
 $(-3, 2)$

(x_2, y_2)
 $(1, 4)$

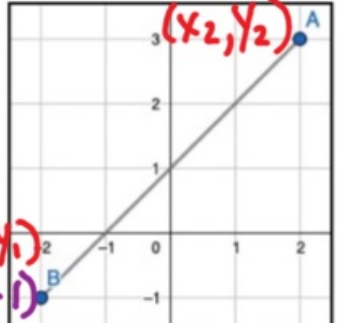
$$d = \sqrt{(1 - (-3))^2 + (4 - 2)^2}$$

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

$$d = \sqrt{16 + 4}$$

$$d = \sqrt{20} \rightarrow d = 2\sqrt{5}$$

$\begin{matrix} \triangle \\ 22 \end{matrix}$



(x_2, y_2)
 $(2, 3)$

(x_1, y_1)
 $(-2, -1)$

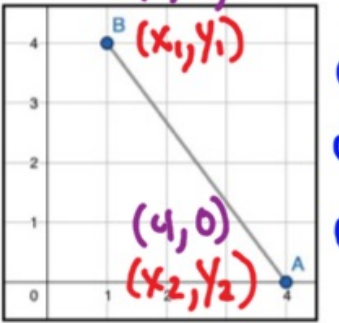
$$d = \sqrt{(2 - (-2))^2 + (3 - (-1))^2}$$

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

$$d = \sqrt{32} \quad d = 4\sqrt{2}$$

$\begin{matrix} \triangle \\ 16 \quad 2 \\ \textcircled{44} \end{matrix}$

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



(x_1, y_1)
 $(1, 4)$

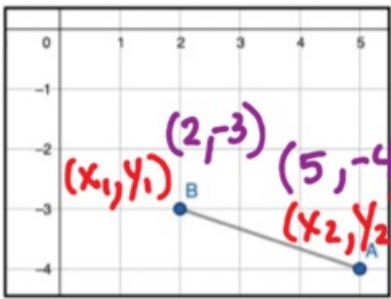
(x_2, y_2)
 $(4, 0)$

$$d = \sqrt{(4 - 1)^2 + (0 - 4)^2}$$

$$d = \sqrt{(3)^2 + (-4)^2}$$

$$d = \sqrt{9 + 16}$$

$$d = \sqrt{25} \rightarrow d = 5$$



(x_2, y_2)
 $(5, -4)$

(x_1, y_1)
 $(2, -3)$

$$d = \sqrt{(5 - 2)^2 + (-4 - (-3))^2}$$

$$d = \sqrt{(3)^2 + (-1)^2}$$

$$d = \sqrt{9 + 1}$$

$$d = \sqrt{10}$$

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

Midpoint Formula with Practice Below

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

$(x_1, y_1) = (-3, 2)$
 $(x_2, y_2) = (1, 4)$

$$M = \left(\frac{-3+1}{2}, \frac{2+4}{2} \right)$$

$$= \left(\frac{-2}{2}, \frac{6}{2} \right)$$

$$= (-1, 3)$$

$(x_1, y_1) = (-2, -1)$
 $(x_2, y_2) = (2, 3)$

$$M = \left(\frac{-2+2}{2}, \frac{-1+3}{2} \right)$$

$$= \left(\frac{0}{2}, \frac{2}{2} \right)$$

$$= (0, 1)$$

$(x_1, y_1) = (1, 4)$
 $(x_2, y_2) = (4, 0)$

$$M = \left(\frac{1+4}{2}, \frac{4+0}{2} \right)$$

$$= \left(\frac{5}{2}, \frac{4}{2} \right)$$

$$= (2.5, 2)$$

$(x_1, y_1) = (2, -3)$
 $(x_2, y_2) = (5, -4)$

$$M = \left(\frac{2+5}{2}, \frac{-3+(-4)}{2} \right)$$

$$= \left(\frac{7}{2}, \frac{-7}{2} \right)$$

$$= (3.5, -3.5)$$

Slope Formula with Practice Below

$$m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

(x_1, y_1)
 $(-3, 2)$

(x_2, y_2)
 $(1, 4)$

$$\frac{4-2}{1-(-3)} \rightarrow \frac{2}{4}$$

$\frac{1}{2}$

$$m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

(x_2, y_2)
 $(2, 3)$

(x_1, y_1)
 $(-2, -1)$

$$\frac{3-(-1)}{2-(-2)} \rightarrow \frac{4}{4} \rightarrow 1$$

$$m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

(x_1, y_1)
 $(1, 4)$

(x_2, y_2)
 $(4, 0)$

$$\frac{0-4}{4-1} \rightarrow \frac{-4}{3}$$

$$m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

(x_1, y_1)
 $(2, -3)$

(x_2, y_2)
 $(5, -4)$

$$\frac{-4-(-3)}{5-2} \rightarrow \frac{-1}{3}$$

$$m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

