

3-1 D2 Notes

Sunday, January 21, 2024 9:37 PM

Pythagorean Theorem -

$$a^2 + b^2 = c^2$$

$$8^2 + 6^2 = c^2$$

$$\sqrt{64 + 36} = c = 10$$

Distance Formula -

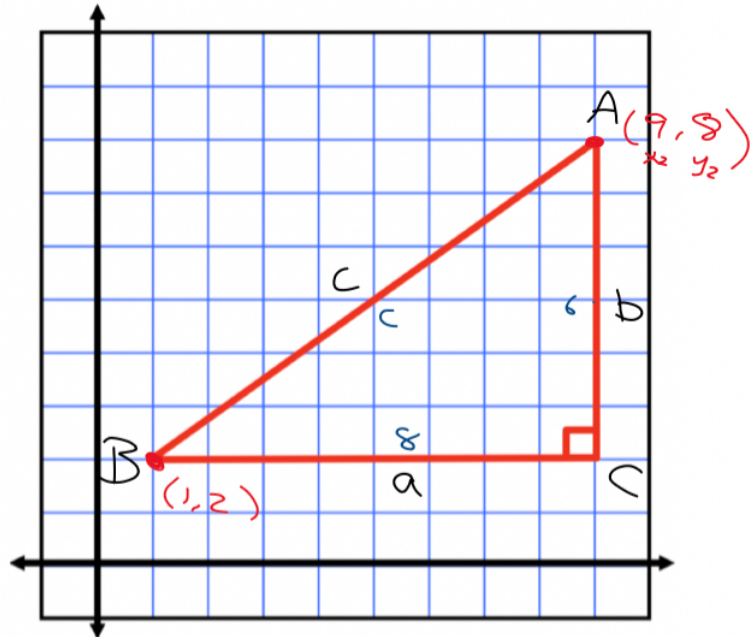
$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$d = \sqrt{(9-1)^2 + (8-2)^2}$$

$$d = \sqrt{8^2 + 6^2} = \sqrt{64 + 36} = \sqrt{100} = 10$$

Midpoint Formula -

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



Find the distance between the two points to the nearest hundredth and find the midpoint of the segment connecting them.

$$P_1 \left(-\frac{5}{2}, \frac{3}{4} \right)$$

$$P_2 \left(\frac{5}{6}, -\frac{9}{4} \right)$$

Distance:

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

$$= \sqrt{\left(\frac{5}{6} - \left(-\frac{5}{2} \right) \right)^2 + \left(-\frac{9}{4} - \frac{3}{4} \right)^2}$$

$$= \sqrt{\left(3\frac{1}{3} \right)^2 + (-3)^2}$$

$$= \sqrt{20.1111}$$

$$= 4.48$$

Midpoint:

$$\left(\frac{\frac{5}{6} + \left(-\frac{5}{2} \right)}{2}, \frac{-\frac{9}{4} + \frac{3}{4}}{2} \right)$$

$$(-0.83, -0.75)$$

