

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

- What is the distance between points A & B?
- What is $m\overline{AB}$?

$$\begin{aligned} d(A, B) &= \sqrt{(9 - (-4))^2 + (2 - (-4))^2} \\ &= \sqrt{(13)^2 + (6)^2} \\ &= \sqrt{169 + 36} \\ &= \sqrt{205} = 14.32 \text{ units} \end{aligned}$$

What is the distance between point
 $D(12, 7)$ and point $E(-2, 1)$?

$$-14x - 14 = +$$

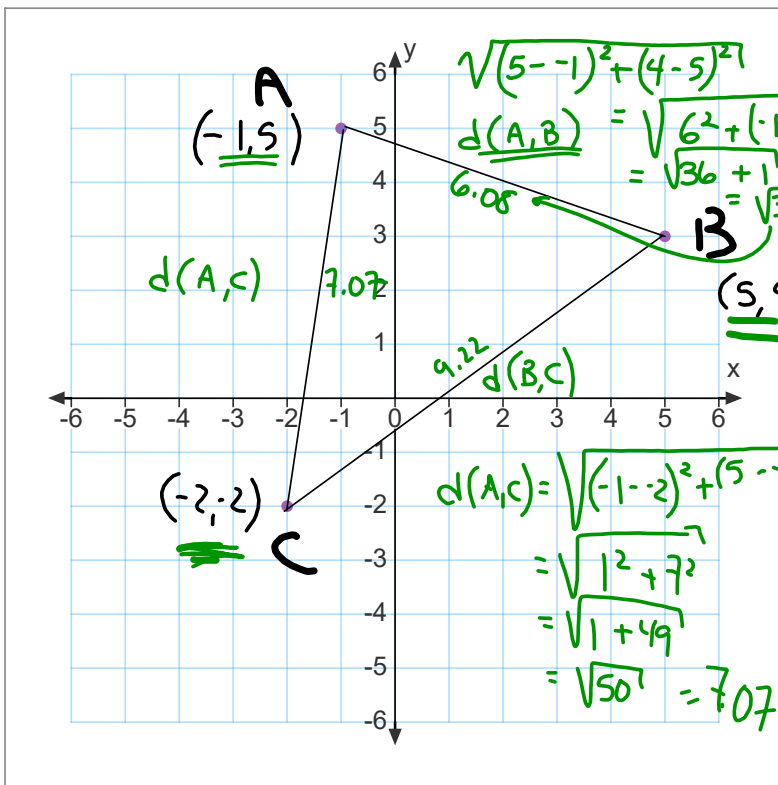
$$d(E, D) = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$d(E, D) = \sqrt{(-2 - 12)^2 + (1 - 7)^2}$$

$$= \sqrt{(-14)^2 + (-6)^2}$$

$$= \sqrt{+196 + 36} \rightarrow = \sqrt{232}$$

$$= 15.23$$



What is the perimeter of $\triangle ABC$?

$$d(B,C) = \sqrt{(5-(-2))^2 + (4-(-2))^2}$$

$$= \sqrt{7^2 + 6^2}$$

$$= \sqrt{49 + 36}$$

$$= \sqrt{85}$$

$$= 9.22$$

Perimeter = $9.22 + 6.08 + 7.07$
 22.37

Find $d(A, B)$, given

$$\begin{aligned} \textcircled{1} \quad A(x_1, y_1) & \text{ ; } B(x_2, y_2) \\ \textcircled{2} \quad A(5, 8) & \text{ ; } B(13, -1) \\ \textcircled{3} \quad A(-6, 7) & \text{ ; } B(14, -4) \end{aligned}$$

$$\begin{aligned} \textcircled{1} \quad d(A, B) &= \sqrt{(-2-7)^2 + (3-(-4))^2} \\ &= \sqrt{(-9)^2 + (7)^2} \\ &= \sqrt{81 + 49} \\ &= \sqrt{130} \\ &= 11.40 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad d(A, B) &= \sqrt{(13-5)^2 + (-1-8)^2} \\ &= \sqrt{8^2 + (-9)^2} \\ &= \sqrt{64 + 81} \\ &= \sqrt{145} \\ &= 12.04 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad d(A, B) &= \sqrt{(14+6)^2 + (-4-7)^2} \\ &= \sqrt{20^2 + (-11)^2} \\ &= \sqrt{400 + 121} \\ &= \sqrt{521} = \underline{\underline{22.83}} \end{aligned}$$

Find $d(A, B)$, given

① $A(\underline{8}, \underline{3})$; $B(\underline{20}, \underline{3})$

$$d = 20 - 8 = \underline{\underline{12}}$$

$$d = \sqrt{12^2 + 0^2}$$

$$d = \sqrt{144}$$

$$= 12$$

② $A(\underline{-5}, \underline{7})$; $(\underline{-5}, \underline{11})$

$$d = 11 - 7 = \underline{\underline{4}}$$