

Distance Formula

L151

Example: Find the distance between the points (5, -1) and (3, 7).

$$\begin{aligned}\text{Distance} &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ &= \sqrt{(3 - 5)^2 + (7 + 1)^2} \\ &= \sqrt{(-2)^2 + (8)^2} = \sqrt{4 + 64} = \sqrt{68} \approx \mathbf{8.25 \text{ units}}\end{aligned}$$

Find the distance between the points. Round the answer to two decimal places.

1) (1, 3), (5, 7)

2) (-8, -9), (-4, -10)

3) (10, 6), (1, -4)

4) (3, 2), (8, 2)

5) (9, -3), (-1, 8)

6) (10, 0), (0, 4)

7) (-7, -2), (6, 9)

8) (-6, 5), (8, -3)

9) (-5, -6), (-9, -4)

10) (2, 0), (-7, 1)

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Find the distance between the points. Round the answer to two decimal places.

1) (1, 3), (5, 7)

$\sqrt{32} \approx 5.66 \text{ units}$

2) (-8, -9), (-4, -10)

$\sqrt{17} \approx 4.12 \text{ units}$

3) (10, 6), (1, -4)

$\sqrt{181} \approx 13.45 \text{ units}$

4) (3, 2), (8, 2)

5 units

5) (9, -3), (-1, 8)

$\sqrt{221} \approx 14.87 \text{ units}$

6) (10, 0), (0, 4)

$\sqrt{116} \approx 10.77 \text{ units}$

7) (-7, -2), (6, 9)

$\sqrt{290} \approx 17.03 \text{ units}$

8) (-6, 5), (8, -3)

$\sqrt{260} \approx 16.12 \text{ units}$

9) (-5, -6), (-9, -4)

$\sqrt{20} \approx 4.47 \text{ units}$

10) (2, 0), (-7, 1)

$\sqrt{82} \approx 9.06 \text{ units}$

Distance Formula

L152

Example: Find the distance between the points $(-2, -1)$ and $(3, -1)$.

$$\begin{aligned} \text{Distance} &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ &= \sqrt{(3 + 2)^2 + (-1 + 1)^2} \\ &= \sqrt{(5)^2 + (0)^2} = \sqrt{25 + 0} = \sqrt{25} = \mathbf{5 \text{ units}} \end{aligned}$$

Find the distance between the points. Round the answer to two decimal places.

1) $(0, 8), (-10, -7)$

3) $(-9, 2), (-8, -1)$

5) $(-7, -5), (-3, 6)$

7) $(1, 2), (-5, -5)$

9) $(4, -9), (-1, -7)$

10) $(-2, 6), (-3, 7)$

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Distance Formula

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Example: Find the distance between the points $(-2, -1)$ and $(3, -1)$.

$$\begin{aligned} \text{Distance} &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ &= \sqrt{(3 + 2)^2 + (-1 + 1)^2} \\ &= \sqrt{(5)^2 + (0)^2} = \sqrt{25 + 0} = \sqrt{25} = \mathbf{5 \text{ units}} \end{aligned}$$

Find the distance between the points. Round the answer to two decimal places.

1) $(0, 8), (-10, -7)$

$$\sqrt{325} \approx 18.0$$

21 units

3) $(-9, 2), (-8, -1)$

$$\sqrt{10} \approx 3.16$$

4)

units

5) $(-7, -5), (-3, 6)$

$$\sqrt{137} \approx 11.7$$

)

28 units

7) $(1, 2), (-5, -5)$

$$\sqrt{85} \approx 9.22 \text{ units}$$

$$\sqrt{106} \approx 10.3 \text{ units}$$

9) $(4, -9), (-1, -7)$

10) $(-2, 6), (-3, 7)$

$$\sqrt{29} \approx 5.39 \text{ units}$$

$$\sqrt{2} \approx 1.41 \text{ units}$$

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Distance Formula

L153

Example: Find the distance between the points (6, 10) and (4, 5).

$$\begin{aligned}
 \text{Distance} &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\
 &= \sqrt{(4 - 6)^2 + (5 - 10)^2} \\
 &= \sqrt{(-2)^2 + (-5)^2} = \sqrt{4 + 25} = \sqrt{29} \approx \mathbf{5.39 \text{ units}}
 \end{aligned}$$

Find the distance between the points. Round the answer to two decimal places.

1) (5, 0), (2, -10)

3) (-3, 9), (-6, -7)

5) (-4, 1), (-8, -5)

7) (-9, -1), (3, -1)

9) (8, -2), (7, 4)

10) (-3, 10), (1, -4)

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-5)

Distance Formula

L153

Example: Find the distance between the points (6, 10) and (4, 5).

$$\begin{aligned} \text{Distance} &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ &= \sqrt{(4 - 6)^2 + (5 - 10)^2} \\ &= \sqrt{(-2)^2 + (-5)^2} = \sqrt{4 + 25} = \sqrt{29} \approx 5.39 \text{ units} \end{aligned}$$

Find the distance between the points. Round the answer to two decimal places.

1) (5, 0), (2, -10)

$$\sqrt{109} \approx 10.4$$

units

3) (-3, 9), (-6, -7)

$$\sqrt{265} \approx 16.2$$

47 units

5) (-4, 1), (-8, -5)

$$\sqrt{52} \approx 7.21$$

54 units

7) (-9, -1), (3, -1)

12 units

$$\sqrt{40} \approx 6.32 \text{ units}$$

9) (8, -2), (7, 4)

$$\sqrt{37} \approx 6.08 \text{ units}$$

10) (-3, 10), (1, -4)

$$\sqrt{212} \approx 14.56 \text{ units}$$

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