

Distance Formula

L2S3

Example: Find the distance between the points $(-1, 8)$ and $(\frac{3}{7}, 9)$.

$$\begin{aligned} \text{Distance} &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ &= \sqrt{\left(\frac{3}{7} + 1\right)^2 + (9 - 8)^2} \\ &= \sqrt{\left(\frac{10}{7}\right)^2 + (1)^2} = \sqrt{\frac{100}{49} + 1} = \sqrt{3.04} \approx 1.74 \text{ units} \end{aligned}$$

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

1) $(10, 9), (0, \frac{5}{8})$

3) $(3, -6), (5, 4)$

5) $(\frac{1}{9}, 7), (2, 5)$

7) $(-4, 8), (6, 1)$

9) $(2, 0), (-10, -5)$

10) $(9, 4), (6, \frac{7}{8})$

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Distance Formula

L253

Example: Find the distance between the points $(-1, 8)$ and $(\frac{3}{7}, 9)$.

$$\begin{aligned} \text{Distance} &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ &= \sqrt{\left(\frac{3}{7} + 1\right)^2 + (9 - 8)^2} \\ &= \sqrt{\left(\frac{10}{7}\right)^2 + (1)^2} = \sqrt{\frac{100}{49} + 1} = \sqrt{3.04} \approx 1.74 \text{ units} \end{aligned}$$

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

1) $(10, 9), (0, \frac{5}{8})$

$\sqrt{170.14} \approx 13.23$

3) $(3, -6), (5, 4)$

$\sqrt{104} \approx 10.20$

5) $(\frac{1}{9}, 7), (2, 5)$

$\sqrt{7.57} \approx 2.75$

7) $(-4, 8), (6, 1)$

$\sqrt{149} \approx 12.21$ units

9) $(2, 0), (-10, -5)$

13 units

10) $(9, 4), (6, \frac{7}{8})$

$\sqrt{18.77} \approx 4.33$ units

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