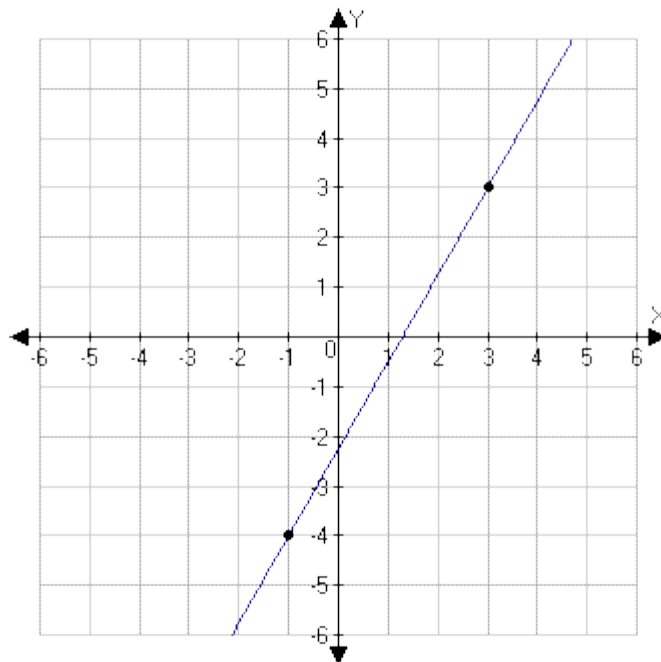


Review Exercise Set 8

Exercise 1: Find the slope of the line passing through the given points.

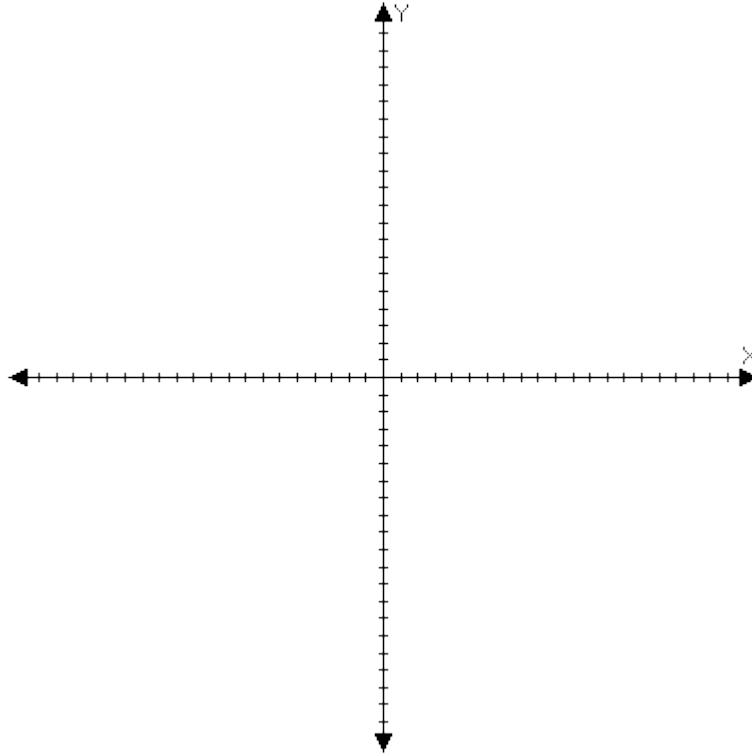
$(3, 6)$ and $(-1, -7)$

Exercise 2: Determine the slope of the line in the given graph.



Exercise 3: Graph the line that has the given slope (m) and passes through the given point (p).

$$m = \frac{3}{8} \text{ and } p = (-4, -2)$$



Exercise 4: Determine whether the lines having the given slopes are parallel, perpendicular, or neither.

$$m_1 = \frac{1}{6} \text{ and } m_2 = -6$$

Exercise 5: Determine whether the given lines are parallel, perpendicular, or neither.

$$m_1 = \frac{3}{2} \text{ and } m_2 = \frac{2}{3}$$

Review Exercise Set 8 Answer Key

Exercise 1: Find the slope of the line passing through the given points.

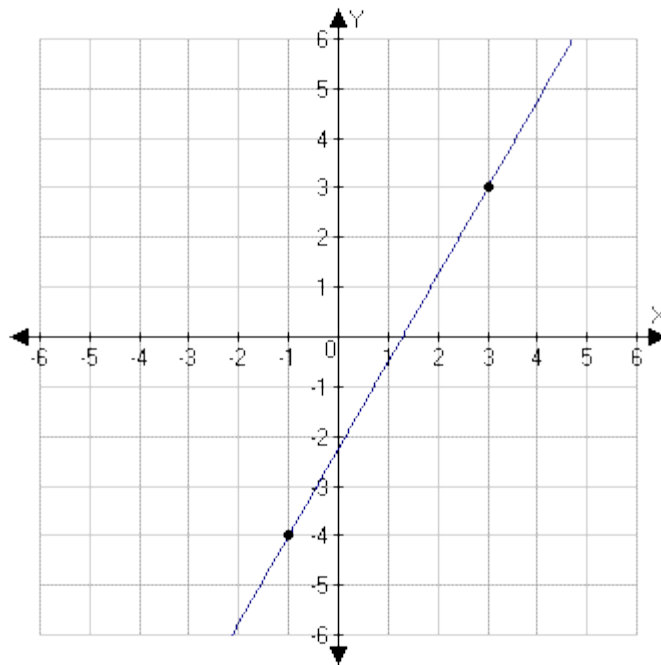
(3, 6) and (-1, -7)

Substitute the coordinates from the points into the slope formula

Let $(x_1, y_1) = (3, 6)$ and $(x_2, y_2) = (-1, -7)$

$$\begin{aligned} m &= \frac{y_2 - y_1}{x_2 - x_1} \\ &= \frac{-7 - 6}{-1 - 3} \\ &= \frac{-13}{-4} \\ &= \frac{13}{4} \end{aligned}$$

Exercise 2: Determine the slope of the line in the given graph.



Identify two points on the line to be (x_1, y_1) and (x_2, y_2)

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

Exercise 2 (Continued):

Substitute the coordinates from the points into the slope formula

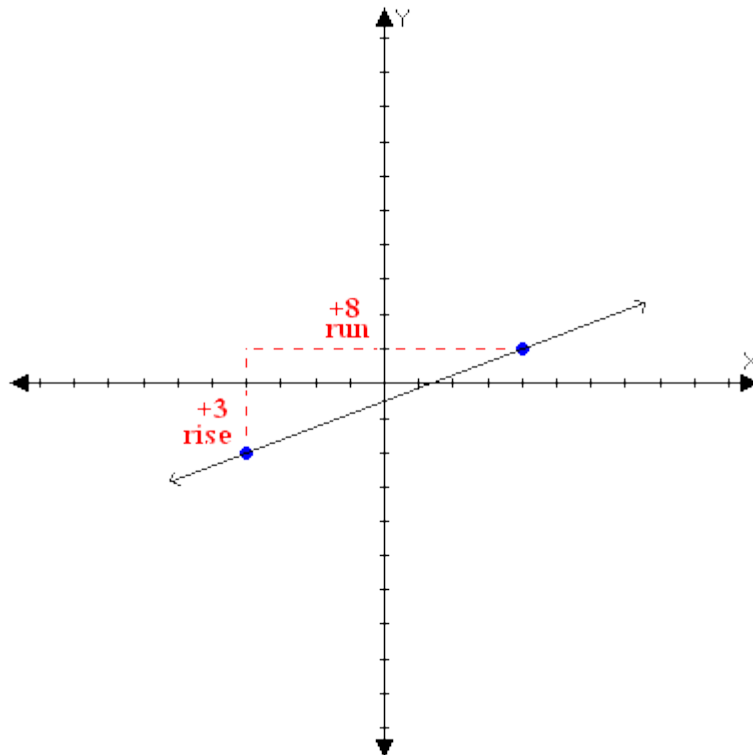
$$\begin{aligned} m &= \frac{y_2 - y_1}{x_2 - x_1} \\ &= \frac{3 - (-4)}{3 - (-1)} \\ &= \frac{3 + 4}{3 + 1} \\ &= \frac{7}{4} \end{aligned}$$

Exercise 3: Graph the line that has the given slope (m) and passes through the given point (p).

$$m = \frac{3}{8} \text{ and } p = (-4, -2)$$

Plot the given point, then use the rise and run from the slope to plot a second point, and draw a line through the points.

$$m = \frac{3}{8} = \frac{\text{rise}}{\text{run}}$$



Exercise 4: Determine whether the lines having the given slopes are parallel, perpendicular, or neither.

$$m_1 = \frac{1}{6} \text{ and } m_2 = -6$$

To be parallel lines their slopes must be equal

$$m_1 \neq m_2 \text{ so the lines are not parallel}$$

To be perpendicular lines the product of their slopes must equal -1

$$m_1 \times m_2 = -1$$

$$\frac{1}{6} \times -6 = -1$$

$$-1 = -1$$

True

The lines are perpendicular.

Exercise 5: Determine whether the given lines are parallel, perpendicular, or neither.

$$m_1 = \frac{3}{2} \text{ and } m_2 = \frac{2}{3}$$

Check if parallel

$$m_1 = m_2$$

$$\frac{3}{2} = \frac{2}{3}$$

False

$$m_1 \neq m_2 \text{ so the lines are not parallel}$$

Check if perpendicular

$$m_1 \times m_2 = -1$$

$$\frac{3}{2} \times \frac{2}{3} = -1$$

$$1 = -1$$

False

$$m_1 \times m_2 \neq -1 \text{ so the lines are not perpendicular}$$

Since the lines are not parallel or perpendicular they are neither.