

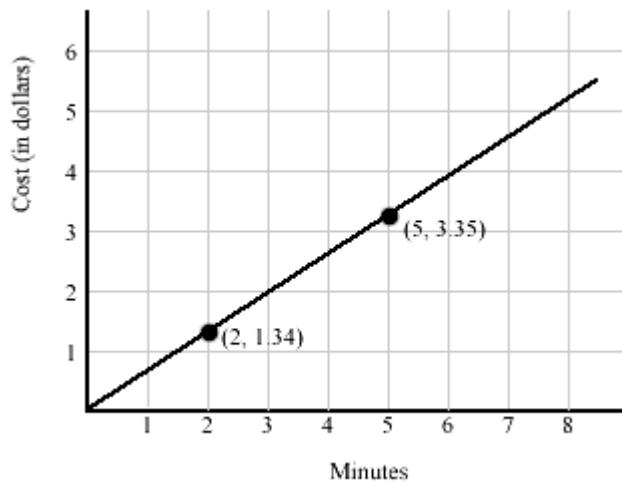
Review Exercise Set 25

Exercise 1: Find the x and y intercepts for $2x + y = -6$ and graph the line.

Exercise 2: Find the slope of the line passing through the points $(-4, 5)$ and $(6, 9)$.

Exercise 3: Find the slope of the line passing through the points $(-3, -5)$ and $(4, 6)$. Graph the line.

Exercise 4: The graph below shows the cost, in dollars, for making a long-distance phone call. Find the slope of the line.



Exercise 5: Graph the equation " $2x - 4y = 12$ " by using the slope and y-intercept.

Review Exercise Set 25 Answer Key

Exercise 1: Find the x and y intercepts for $2x + y = -6$ and graph the line.

Find the intercepts

For x-intercept let $y = 0$ and solve for x

$$\begin{aligned}2x + y &= -6 \\2x + 0 &= -6 \\2x &= -6 \\x &= -3\end{aligned}$$

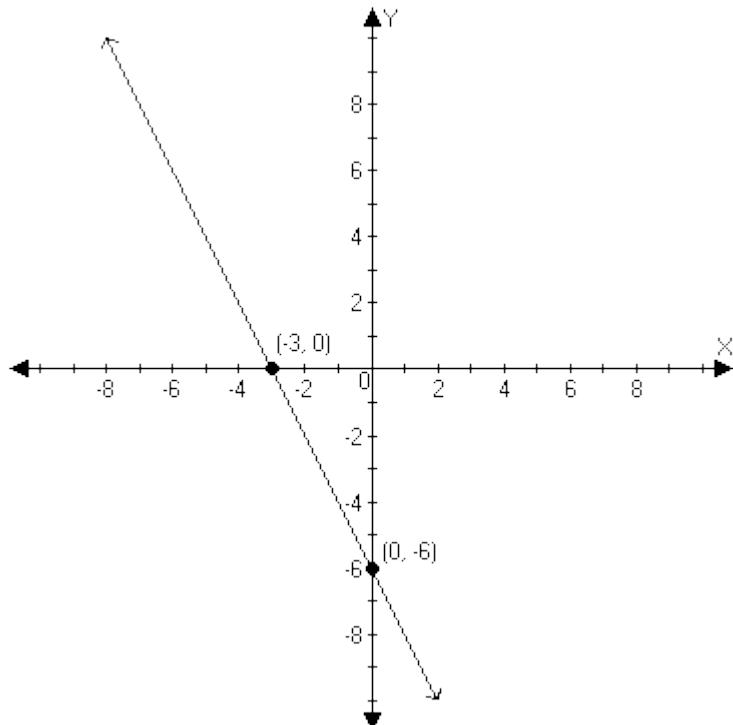
x-intercept is at $(-3, 0)$

For y-intercept let $x = 0$ and solve for y

$$\begin{aligned}2x + y &= -6 \\2(0) + y &= -6 \\y &= -6\end{aligned}$$

y-intercept is at $(0, -6)$

Now, plot the intercepts and draw the line through the points



Exercise 2: Find the slope of the line passing through the points (-4, 5) and (6, 9).

The equation for the slope of a line is the difference between the y-values divided by the difference between the x-values. The variable m is used to represent the slope of a line.

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{9 - 5}{6 - (-4)}$$

$$m = \frac{4}{10}$$

$$m = \frac{2}{5}$$

The slope is 2/5.

Exercise 3: Find the slope of the line passing through the points (-3, -5) and (4, 6). Graph the line.

First, find the slope.

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{6 - (-5)}{4 - (-3)}$$

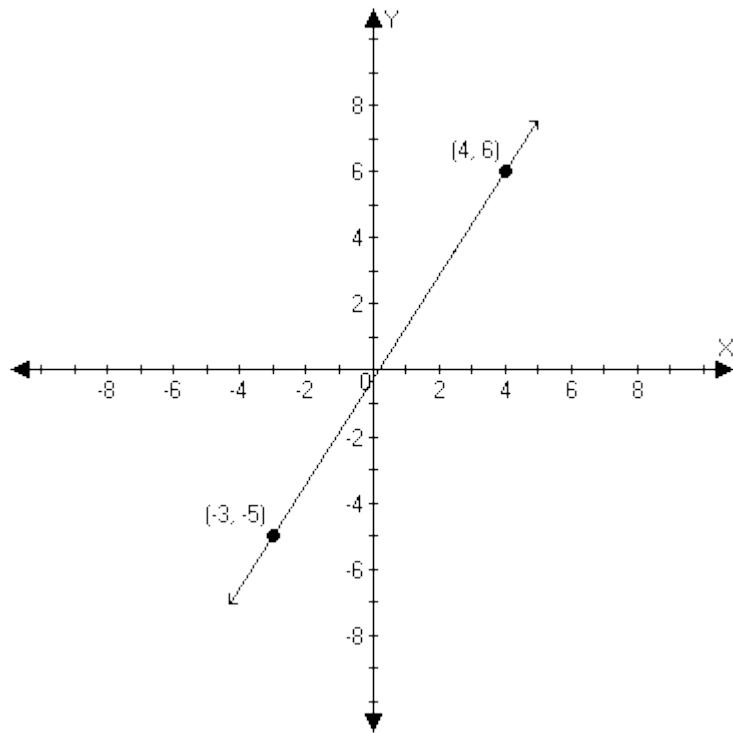
$$m = \frac{6 + 5}{4 + 3}$$

$$m = \frac{11}{7}$$

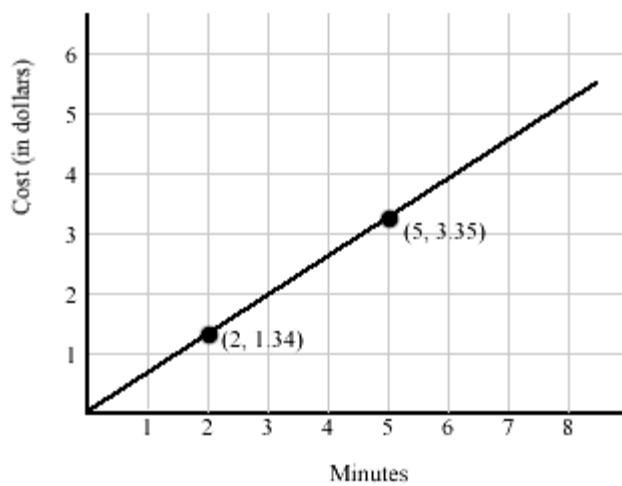
The slope is 11/7.

Exercise 3 (Continued):

Now, graph the line by plotting the given points.



Exercise 4: The graph below shows the cost, in dollars, for making a long-distance phone call. Find the slope of the line.



Exercise 4 (Continued):

Substitute the two points (2, 1.34) and (5, 3.35) into the slope equation.

$$\begin{aligned}m &= \frac{y_2 - y_1}{x_2 - x_1} \\m &= \frac{3.35 - 1.34}{5 - 2} \\m &= \frac{2.01}{3} \\m &= 0.67\end{aligned}$$

The slope of the line is 0.67, which means it costs 67 cents per minute for a long-distance call.

Exercise 5: Graph the equation "2x - 4y = 12" by using the slope and y-intercept.

First, we will find the intercepts

Let x = 0 and solve for y

$$\begin{aligned}2x - 4y &= 12 \\2(0) - 4y &= 12 \\0 - 4y &= 12 \\-4y &= 12 \\y &= -3\end{aligned}$$

Let y = 0 and solve for x

$$\begin{aligned}2x - 4y &= 12 \\2x - 4(0) &= 12 \\2x - 0 &= 12 \\2x &= 12 \\x &= 6\end{aligned}$$

y-intercept is at (0, -3)

x-intercept is at (6, 0)

Now, we can find the slope using our two intercepts.

$$\begin{aligned}m &= \frac{y_2 - y_1}{x_2 - x_1} \\m &= \frac{0 - (-3)}{6 - 0} \\m &= \frac{0 + 3}{6} \\m &= \frac{3}{6} \\m &= \frac{1}{2}\end{aligned}$$

The slope is 1/2

Exercise 5 (Continued):

Now, graph the line by plotting the y-intercept and using the slope to find other points along the line. The numerator of the slope is called the "rise" and the denominator is the "run". So with a slope of $\frac{1}{2}$ you would rise (move up since 1 is positive) one unit and then run (move to the right since 2 is positive) two units from the previous point to reach a new point on the line.

