Name _____ Date _____

Graphing Linear and Quadratic Functions - Guided Lesson Explanation

Explanation#1

The x-intercept is the x-coordinate of the point where the graph crosses the x-axis. The coordinates of the x-intercept are (x, 0), where x is the x-intercept.

The y-intercept is the y-coordinate of the point where the graph crosses the y-axis. The coordinates of the y-intercept are (0, y), where y is the y-intercept.

Find the x-intercept.

The x-intercept is on the x-axis, where y = 0. Plug y = 0 into the equation and solve for the x-intercept x.

$5x - 9y = 45$

$5x - 9(0) = 45$ Plug in y = 0

$5x = 45$ Simplify

$x = 9$ Dividebothsidesby3

The x-intercept is 9. Its coordinates are (9, 0).

Find the y-intercept.

The y-intercept is on the y-axis, where x = 0. Plug x = 0 into the equation and solve for the y-intercept y.

$5x - 9y = 45$

$5(0) - 9y = 45$ Plug in x = 0

$-9y = 45$ Simplify

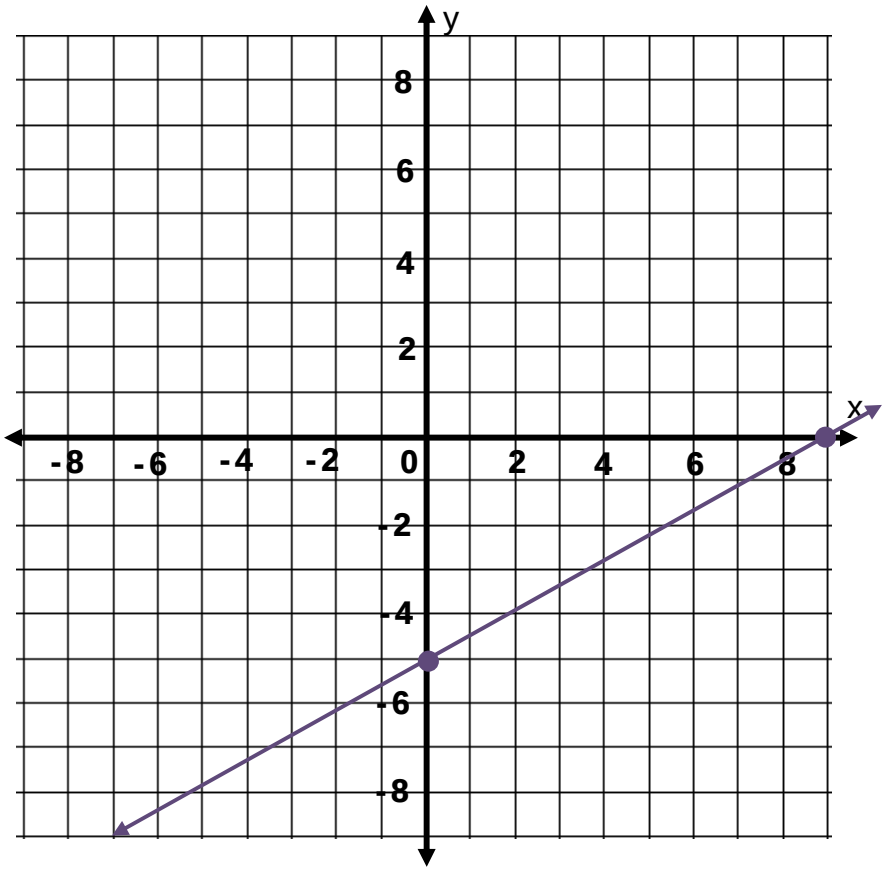
$y = -5$ Dividebothsidesby-5

The y-intercept is -5. Its coordinates are (0, -5)

Use the intercepts to graph.

Plot the x-intercept (9, 0) and the y-intercept (0, -5). The graph is the straight line connecting them.

Name _____ Date _____



Name _____ Date _____

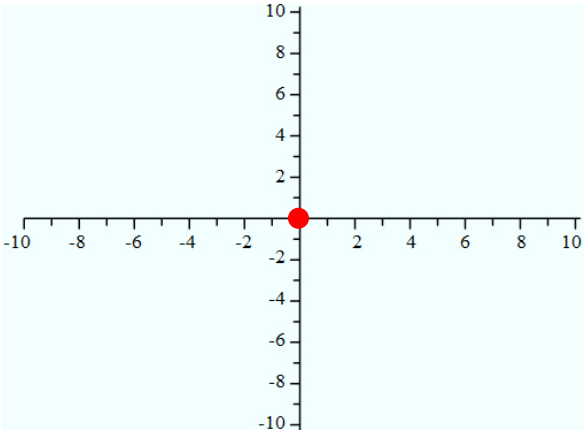
Explanation # 2

Slope = $\frac{\text{Change in y}}{\text{change in x}}$

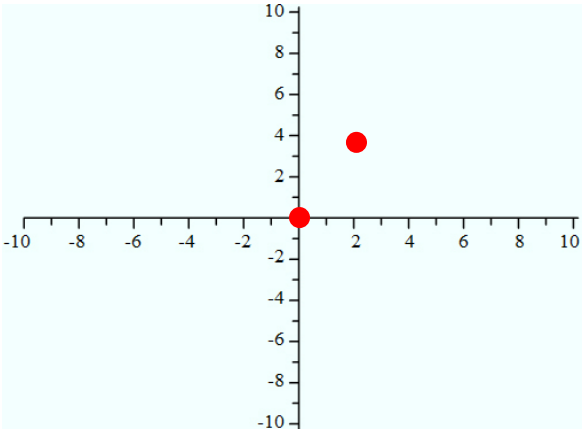
The coordinates of the y- intercept are (0, y), where y is the y- intercept.

In the equation y = mx +b, m is the slope and b is the y- intercept.

$y = \frac{4}{2}x$ is the same as $y = \frac{4}{2}\ x + 0$, so the y- intercept is 0. Plot the point (0,0).

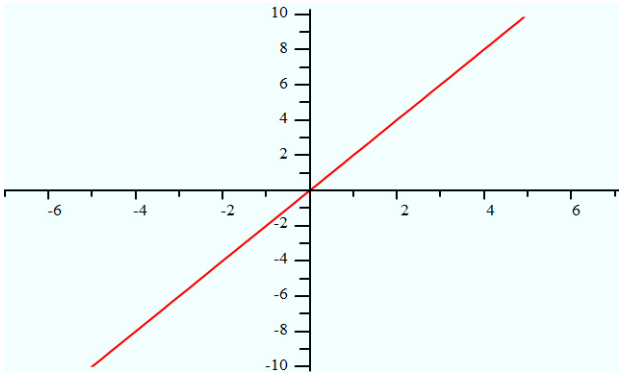


The slope is $\frac{4}{2}$. Move up 4 and right 2 to find another point on the line.



Name _____ Date _____

The graph is the straight line connecting (0,0) and (2,4).



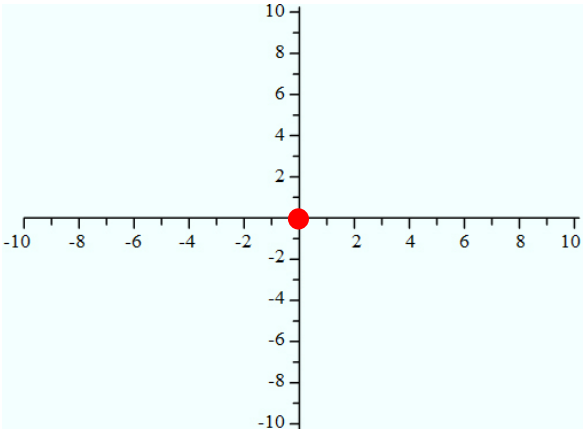
Explanation # 3

Slope $= \frac{\text{Change in y}}{\text{change in x}}$

The coordinates of the y- intercept are (0, y), where y is the y- intercept.

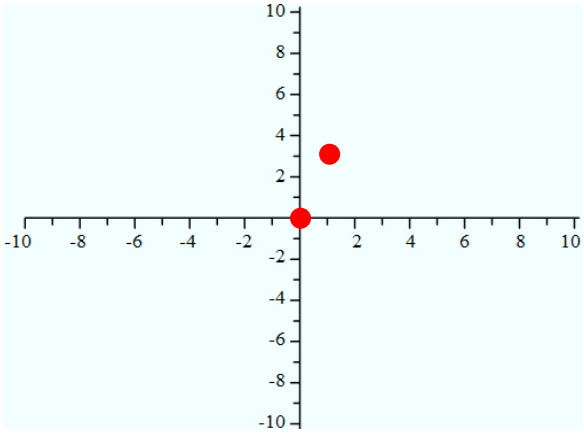
In the equation y = mx +b, m is the slope and b is the y- intercept.

$y = \frac{3}{1}x$ is the same as $y = \frac{3}{1}x + 0$, so the y- intercept is 0. Plot the point (0,0).



Name _____ Date _____

The slope is $\frac{3}{1}$. Move up 3 and right 1 to find another point on the line.



The graph is the straight line connecting (0,0) and (1,3).