

Chapter 8 Section 6

Slope-Intercept Form

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

$\frac{\Delta y}{\Delta x}$

m

Rise
Run

Slope

y-intercept

Slope of a Line

$f(x) = 15x$

m 1.5

b 0

Compute Slope

SMART

Slope activity

Vocabulary

- **Linear equation** – an equation whose graph is a line.
- **y-intercept** – the y-coordinate of the point where a line crosses the y-axis.
- **Slope-intercept form** –
$$y = mx + b$$
where $m = \text{slope}$ and $b = \text{y-intercept}$.

Steps:

1. Plot the y-intercept.
2. Use the slope (rise/run) to find two points.
3. Draw the line with arrows.

Vocabulary

$$y = mx + b$$

$m \rightarrow$ slope

$b \rightarrow$ y-intercept

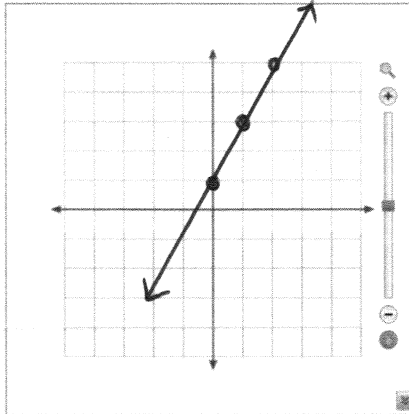
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Graph each equation using the slope and y-intercept.

$$y = 2x + 1$$

$$m = 2 = \frac{2}{1}$$

$$b = 1$$



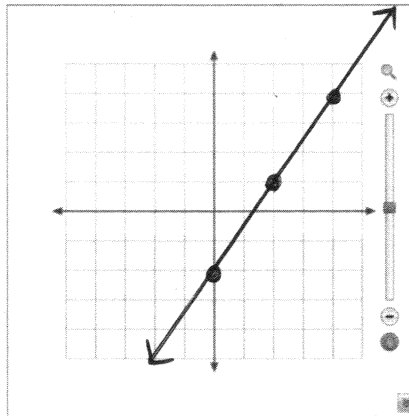
Problem 1

Graph each equation using the slope and y-intercept.

$$y = \frac{3}{2}x - 2$$

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

$$b = -2$$



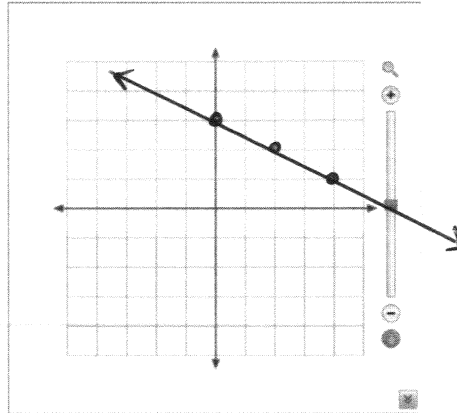
Problem 2

Graph each equation using the slope and y-intercept.

$$y = -\frac{1}{2}x + 3$$

$$m = -\frac{1}{2}$$

$$b = 3$$



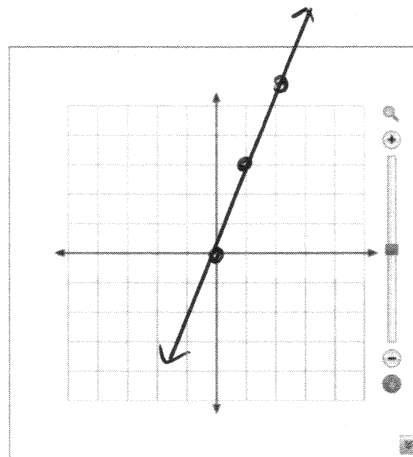
Problem 3

Graph each equation using the slope and y-intercept.

$$y = 3x$$

$$m = 3 = \frac{3}{1}$$

$$b = 0$$



Answer problem 1

Graph each equation using the slope and y-intercept.

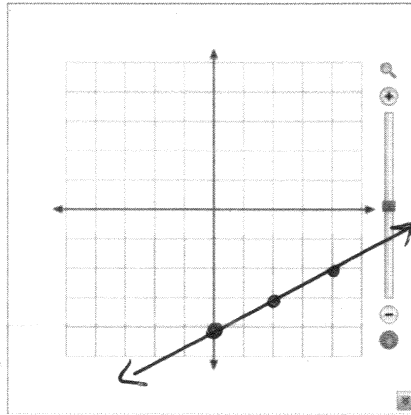
$$y = \frac{x}{2} - 4$$

$$y = \frac{1x}{2} - 4$$

$$y = \frac{1}{2}x - 4$$

$$m = \frac{1}{2}$$

$$b = -4$$



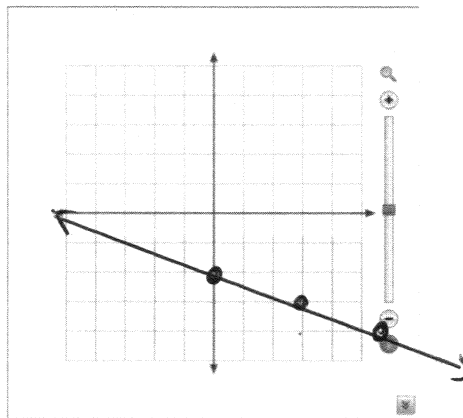
Answer Problem 2

Graph each equation using the slope and y-intercept.

$$y = -\frac{1}{3}x - 2$$

$$m = -\frac{1}{3}x$$

$$b = -2$$



Answer Problem3