

8.5

DETERMINING AN EQUATION OF A LINE

Standard Form of a Linear Equation

$$ax + by = c$$

SLOPE FORMULA

$$\begin{matrix} (-3, -4) & \text{and} & (1, 2) \\ (x_1, y_1) & & (x_2, y_2) \end{matrix}$$

If you do not have the graph of a line use...

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

Slope-Intercept Form of a Linear Equation

$$y = mx + b$$

Practice

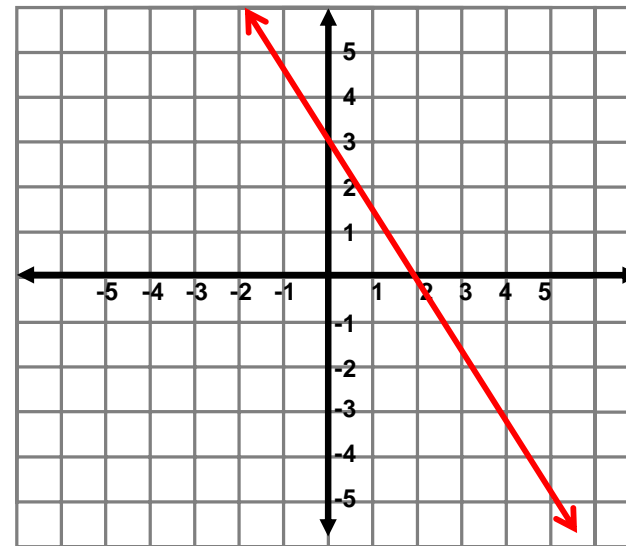
$$y = mx + b$$

Write an equation in slope-intercept form of each line described.

1) slope 2; y-intercept 5

2) slope $-\frac{1}{2}$; y-intercept $\frac{3}{2}$

X AND Y INTERCEPTS



What's the y-intercept?

What's the x-intercept?

Practice

$$y = mx + b$$

Write an equation in slope-intercept form of each line described.

3) slope -4 ; x-intercept 3

Practice

$$y = mx + b$$

Write an equation in slope-intercept form of each line described.

4) slope -3 ; x-intercept -3

Practice

$$y = mx + b$$

Write an equation in slope-intercept form of the line passing through the given points.

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

Practice

$$y = mx + b$$

Write an equation in slope-intercept form of the line passing through the given points.

6) $(-2, 5), (4, 8)$

Practice

$$y = mx + b$$

Write an equation in slope-intercept form of the line passing through the given points.

7) $(7, 7), (2, -2)$

POINT-SLOPE FORM of a Linear Equation

$$y - y_1 = m(x - x_1)$$

m = the slope

(x_1, y_1) = any given point

Practice

$$y - y_1 = m(x - x_1)$$

Write an equation in slope-intercept form of each line described.

1) slope 2; y-intercept 5

2) slope $-\frac{1}{2}$; y-intercept $\frac{3}{2}$

Practice

$$y - y_1 = m(x - x_1)$$

Write an equation in slope-intercept form of each line described.

3) slope -4 ; x-intercept 3

Practice

$$y - y_1 = m(x - x_1)$$

Write an equation in slope-intercept form of each line described.

4) slope -3 ; x-intercept -3

Practice

$$y - y_1 = m(x - x_1)$$

Write an equation in slope-intercept form of the line passing through the given points.

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

Practice

$$y - y_1 = m(x - x_1)$$

Write an equation in slope-intercept form of the line passing through the given points.

6) $(-2, 5), (4, 8)$

Practice

$$y - y_1 = m(x - x_1)$$

Write an equation in slope-intercept form of the line passing through the given points.

7) $(7, 7), (2, -2)$