

Warm up- Write the following in slope intercept form given the information.

1. $m=3$; $b=-1$

$$y = 3x - 1$$

(x, y)

2. $m=-1$; $(3, -2)$

$$y = mx + b$$

$$-2 = -1(3) + b$$

$$-2 = -3 + b$$

$$+3 \quad +3$$

$$1 = b$$

$$y = -x + 1$$

6.5 Point Slope Form

Slope Intercept Form: $y = mx + b$

$m = \text{slope}$ $b = y\text{-intercept}$

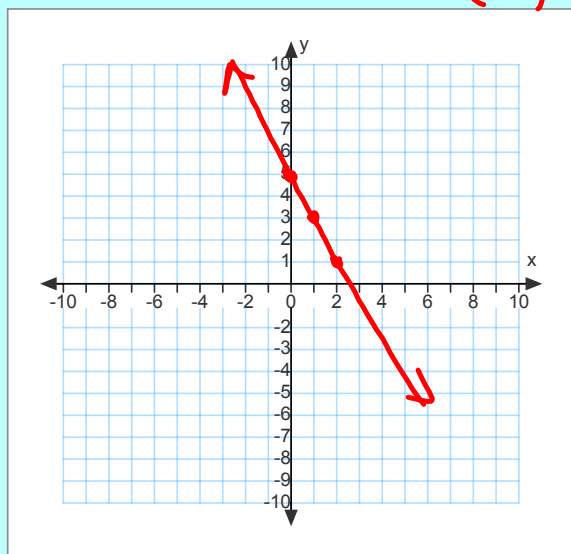
Point Slope Form: $y - y_1 = m(x - x_1)$

$m = \text{slope}$ $(x_1, y_1) = \text{point given}$

Graphing given in Point Slope Form

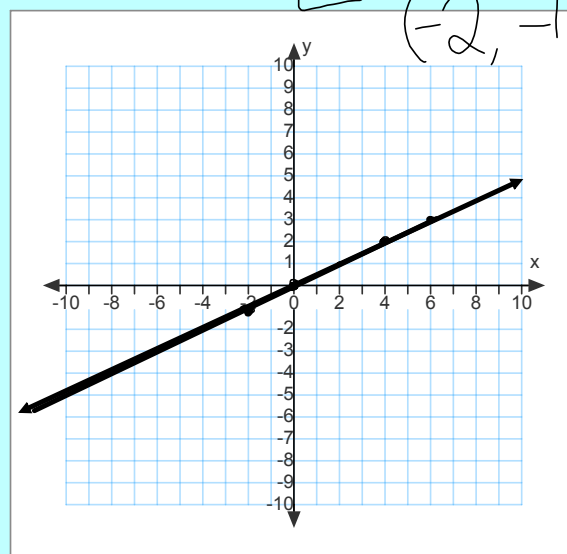
Ex 1: $y - y_1 = m(x - x_1)$

$$y - 3 = -2(x - 1) \quad (1, 3)$$



Ex 2:

$$y + 1 = \frac{1}{2}(x + 2) \quad (-2, -1)$$



Write in Point Slope Form and Slope Intercept Form given a slope and a point

Ex 1: (4, 7); $m = -2$

x_1, y_1

Point Slope Form

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

$$y - 7 = -2(x - 4)$$

Slope Intercept Form

$$1. y = mx + b$$

$$7 = -2(4) + b$$

$$7 = -8 + b$$

$$\begin{array}{r} +8 \\ +8 \\ \hline \end{array}$$

$$15 = b$$

$$y = -2x + 15$$

$$2. y - 7 = -2(x - 4)$$

$$y - 7 = -2x + 8$$

$$\begin{array}{r} +7 \\ +7 \\ \hline \end{array}$$

$$y = -2x + 15$$

Write in Point Slope form Intercept Form given two points

Ex 1:

$(3, -5)$ and $(-2, 5)$
 ① ②

What is the Formula for slope?

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

Point Slope Form

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - (-5)}{-2 - 3}$$

$$= \frac{10}{-5} = -2 = m$$

(3, -5)

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

$$y + 5 = -2(x - 3)$$

$$y + 5 = -2x + 6$$

$$\begin{array}{r} y + 5 = -2x + 6 \\ -5 \qquad \qquad -5 \\ \hline y = -2x + 1 \end{array}$$

Slope Intercept Form

$$m = -2 \quad \begin{array}{l} (-2, 5) \\ (x, y) \end{array}$$

$$y = mx + b$$

$$5 = -2(-2) + b$$

$$5 = 4 + b$$

$$\begin{array}{r} -4 \quad -4 \\ \hline 1 = b \end{array}$$

$$y = -2x + 1$$

Homework!

Pg 339 #1, 6, 9, 10-16 even (Write in point slope form and slope intercept form), 19-24

Also, Bring textbook tomorrow. It needs to be covered!



