

Content and Language Objective:

Students will write slope-intercept equations from a graph or given the slope and the y-intercept to see how the slope and y-intercept relate to graphs.

Warm-Up

1. Convert $y - 3 = -2(x + 3)$ to y-intercept form.

$$\begin{array}{rcl} y - 3 & = & -2x - 6 \\ +3 & & +3 \\ \hline y & = & -2x - 3 \end{array}$$

$$\begin{array}{rcl} y - 3 & = & -2(x + 3) \\ +3 & & +3 \\ \hline y & = & 3 - 2(x + 3) \\ y & = & 3 - 2x - 6 \\ y & = & -3 - 2x \end{array}$$

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Given the following equations find the slope and y-intercept

$$y = mx + b$$

1. $y = 3x + 5$

slope: $m = 3$
y int: $b = 5$

2. $y = -4x - 7$

$m = -4$
 $b = -7$

3. $9 + 2x = y$

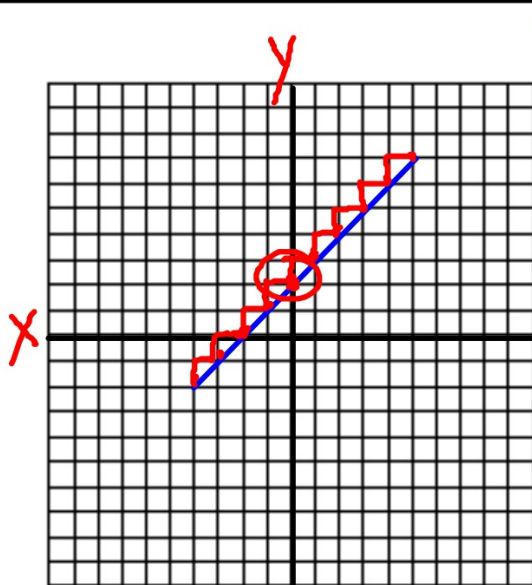
$m = 2$
 $b = 9$

4. $y = -10 - 6x$

$m = -6$
 $b = -10$

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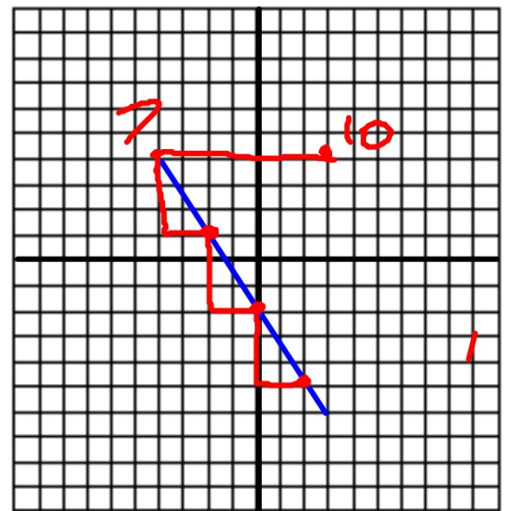
$$y = mx + b$$

$$m = \frac{\text{rise}}{\text{run}} = \frac{1}{1} = 1$$

$$b = 2$$

$$\cancel{y = 2x + 1}$$

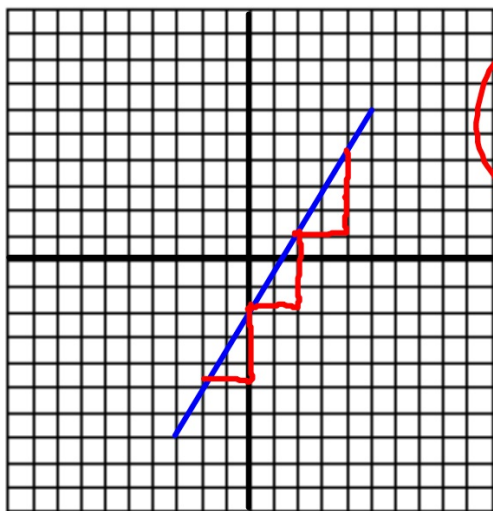
$$y = 1x + 2$$



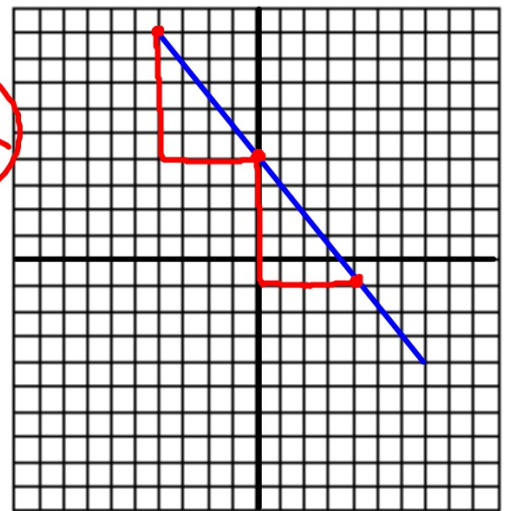
$$y = -\frac{3}{2}x - 2$$

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



$$y = -\frac{5}{4}x + 4$$

