

5-12-17

Aim: SWBAT graph equations using the Slope-Intercept method AND write an equation in slope-intercept form given the graph.

Do Now: Quiz

HW: Pg. 601 # 10, 12 - 14, 16 - 18, 23, 24, 26, 27, 37 - 39  
Pg. 634 Late Night Show

Rewrite the equation in slope-intercept form.

$$y = mx + b$$

1.  $-2x + 3y = 6$

$$\begin{array}{r} +2x \quad +2x \\ \hline 3y = 2x + 6 \\ \hline y = \frac{2}{3}x + 2 \end{array}$$

2.  $-x + y = 6$

$$\begin{array}{r} +x \quad +x \\ \hline y = x + 6 \end{array}$$

3.  $2x = y + 5$

$$\begin{array}{r} -5 \quad -5 \\ \hline 2x - 5 = y \\ y = 2x - 5 \end{array}$$

4.  $8x - 4y = 32$

$$\begin{array}{r} -8x \quad -8x \\ \hline -4y = -8x + 32 \\ \hline y = 2x - 8 \end{array}$$

5.  $x - y = -2$

$$\begin{array}{r} -x \quad -x \\ \hline -y = -x - 2 \\ \hline y = x + 2 \end{array}$$

$$\begin{array}{r} -x = 3 \\ \div -1 \quad \div -1 \\ \hline x = -3 \end{array}$$

$$x = -3$$

6.  $y = 6 - x$

$$y = -x + 6$$

7.  $1 = 2x - y$

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

8.  $6x = 10 - y$

$$\begin{array}{r} +y \quad +y \\ \hline y + 6x = 10 \\ \hline -6x \quad -6x \\ \hline y = -6x + 10 \end{array}$$

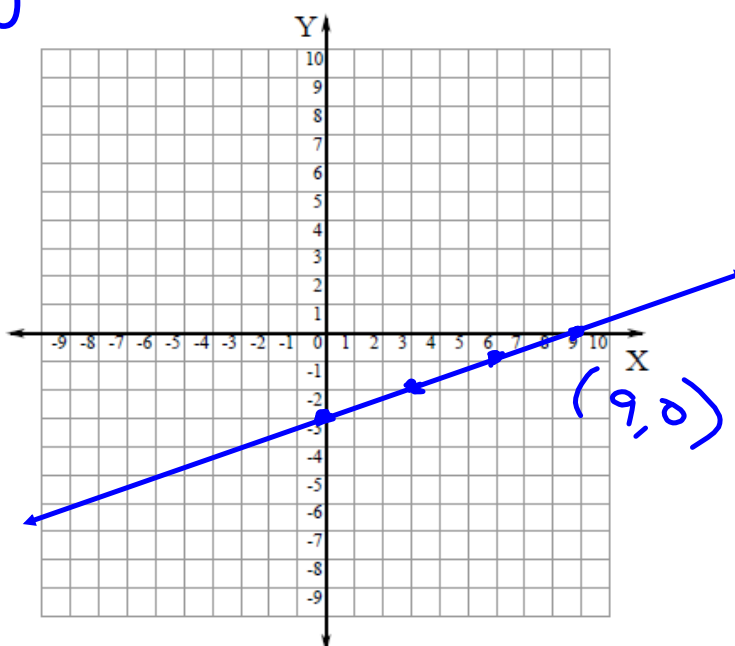
$$y = 2x - 1$$

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

Pg. 625 # 30

$(9, 0)$

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

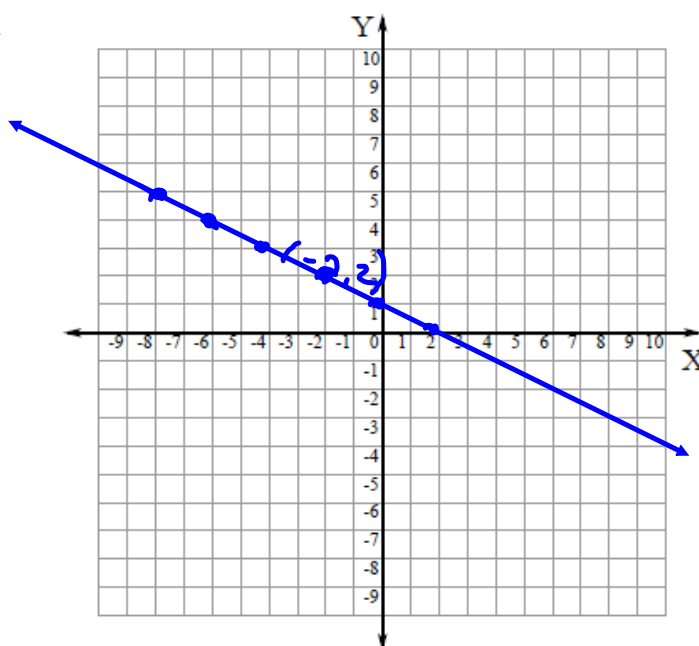


Pg. 625 # 31

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

$$-\frac{1}{2} \text{ or } \frac{1}{-2}$$

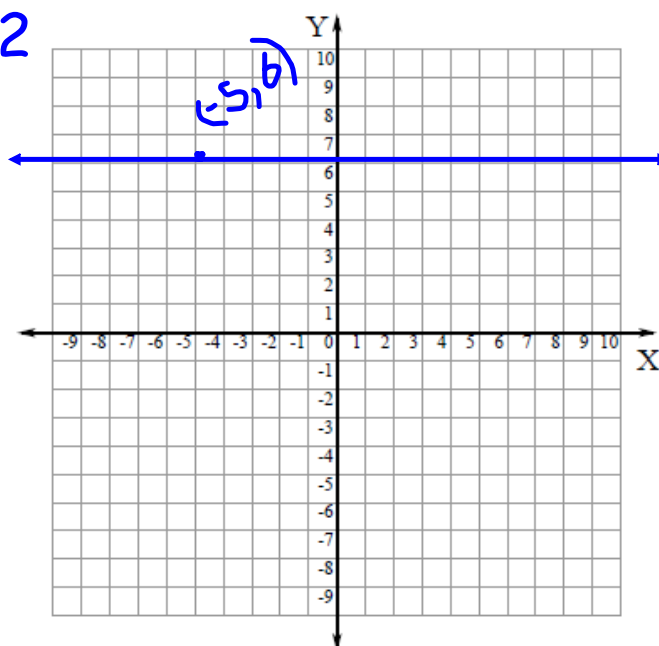
$$-\frac{1}{2} = \frac{-1}{2} = \frac{1}{-2}$$



Pg. 625 # 32

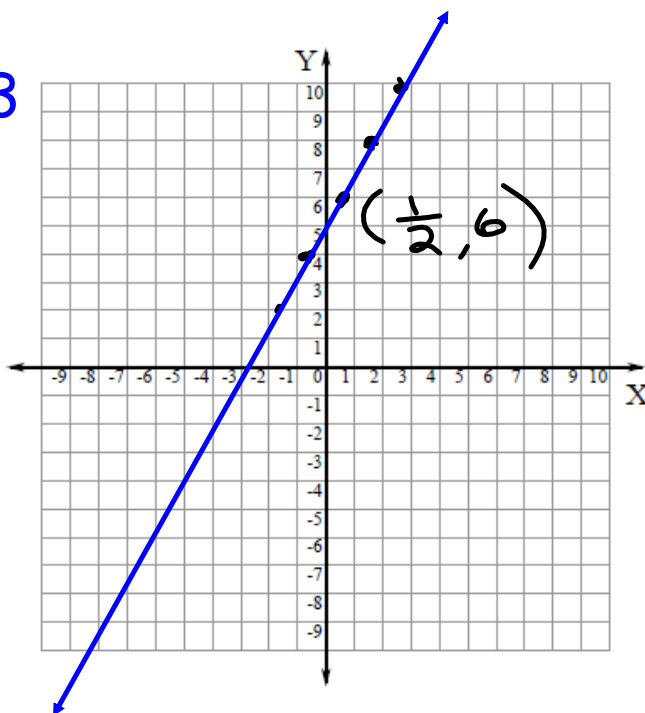
$$m = 0$$

zero slope is a  
horizontal line



Pg. 625 # 33

$$\left(\frac{1}{2}, 6\right); m=2$$
$$m = \frac{2}{1} \text{ or } \frac{-2}{-1}$$



## Slope-Intercept Form

$$y = mx + b$$

- $m$  is the slope
- $b$  is the  $y$ -intercept

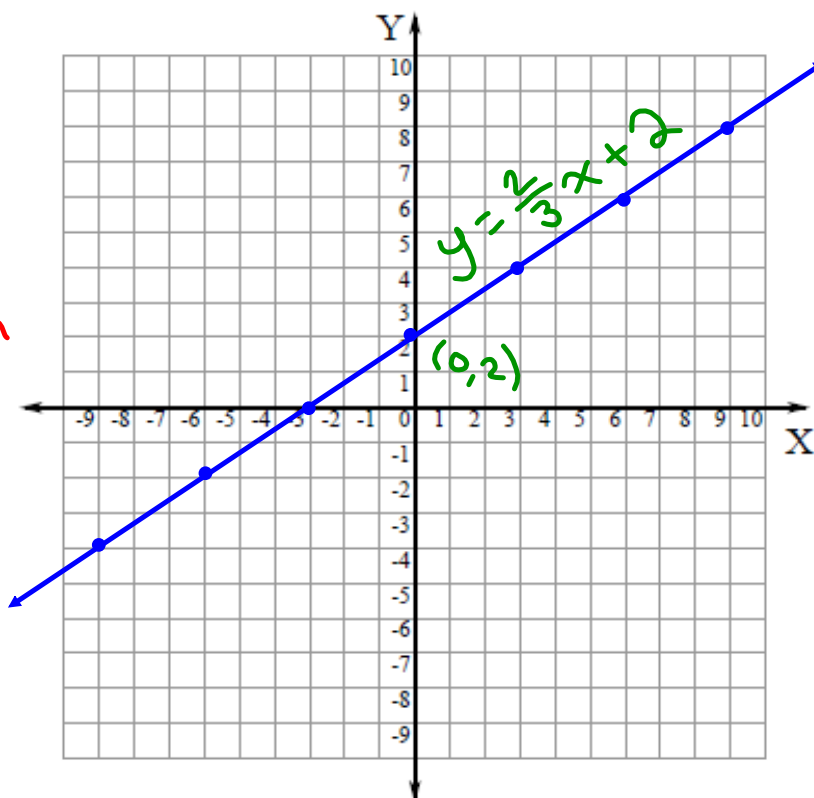
the coordinate of the  $y$ -intercept is  $(0, b)$

•  
 $y = mx + b$

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

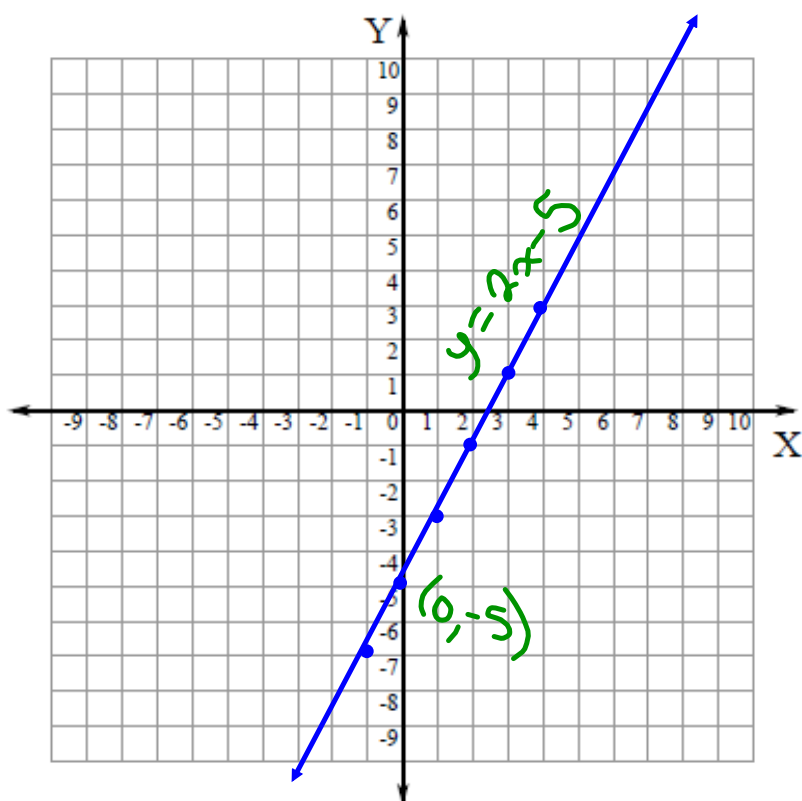
$$m = \frac{2}{3} \quad \begin{array}{l} 2 \text{ up, } 3 \text{ right} \\ 2 \text{ down, } \\ 3 \text{ left} \end{array}$$

$b = 2$   
coord. of the  
y-int.  $(0, 2)$

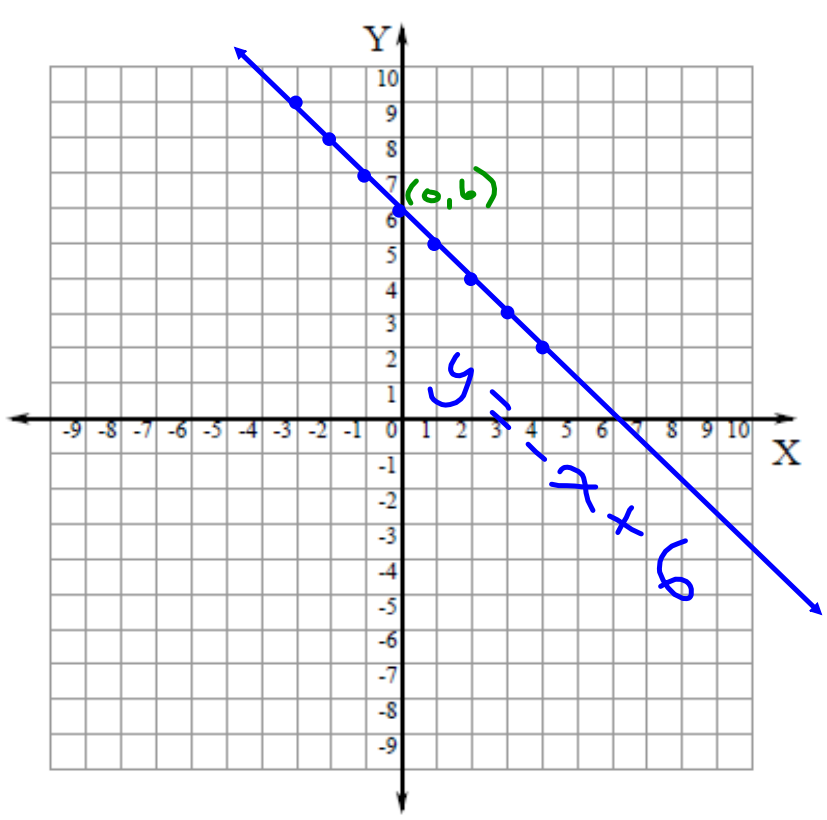




•  
 $y = 2x - 5$   
 $m = 2$      *you think*  
 $b = -5$       $\frac{2}{1} = \frac{-2}{-1}$   
coord. of y-int.  
 $(0, -5)$



•  
 $y = -x + 6$   
 $m = -1$   
 $b = 6$   
coord. of  
y-int  $(0, 6)$



The next 3 slides show how to get the slope-intercept equation from the line.

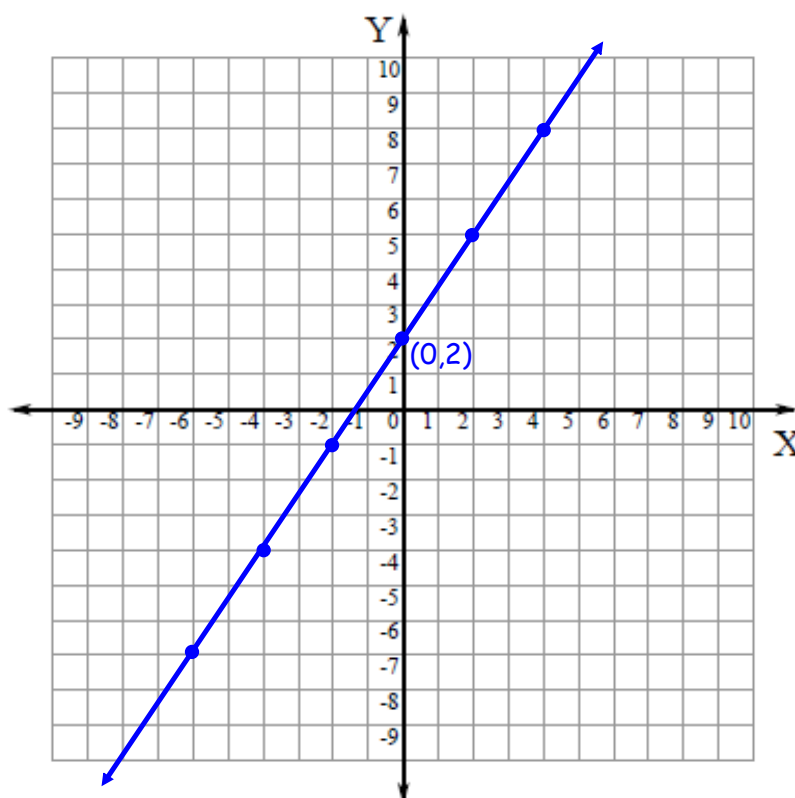
$$y = mx + b$$

coord. of y-int  
(0, 2)

$$b = 2$$

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

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



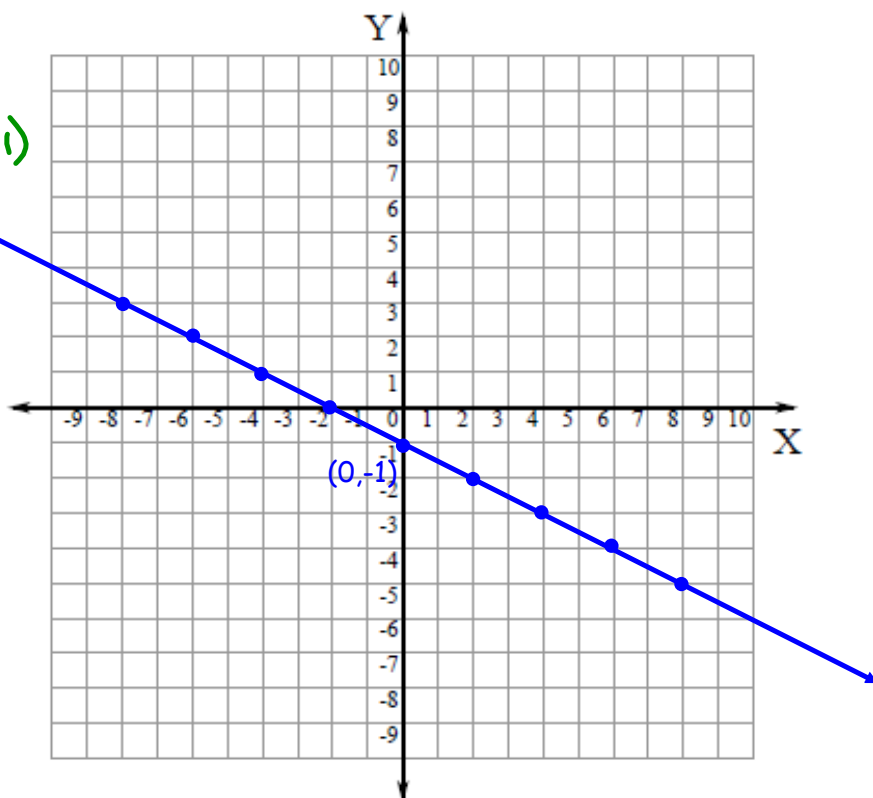
$$y = mx + b$$

•  
coord. of y-int  $(0, -1)$

$$b = -1$$

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

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



•

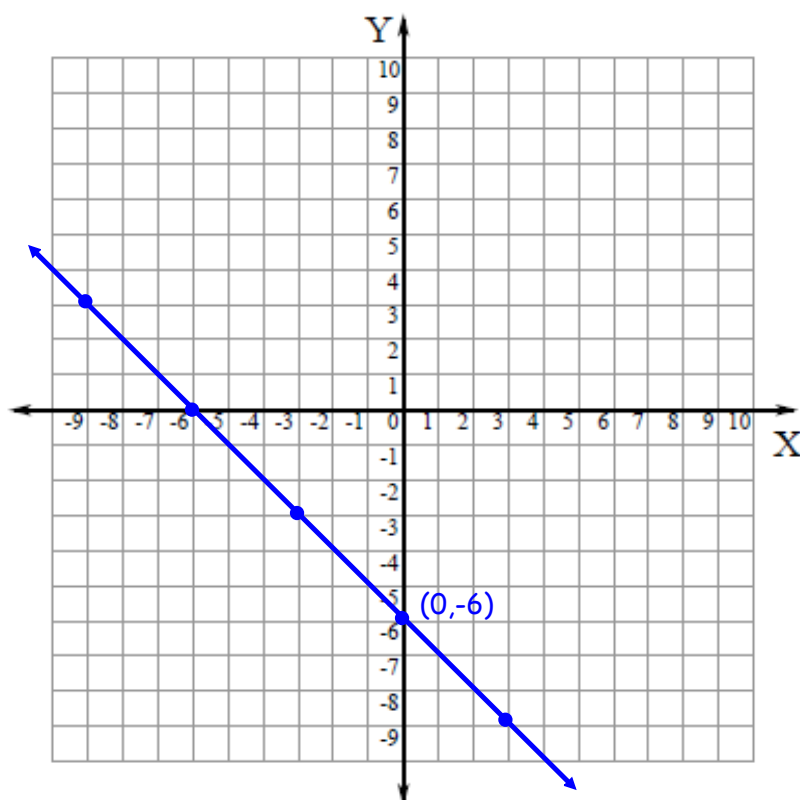
$$y = mx + b$$

coord. of y-int.  
(0, -6)

$$b = -6$$

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

$$y = -x - 6$$



Pg. 634 Late Night Show

$$y = mx + b$$

$$y = 3x + 2$$
$$m = 3$$
$$b = 2$$

$$y = 3x - 2$$
$$m = 3$$
$$b = -2$$

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