

Get out your book and Warm Up on #1-5 on p. 203. Have your homework out ready to check!

Classwork - Slope Intercept Form ($y = mx + b$)

Independent Practice

Go online for Step-by-Step Solution

State the slope and the y -intercept for the graph of each equation.

(Example 1)

1. $y = 3x + 4$ _____

$$m = 3$$

$$b = (0, 4)$$

2. $y = -\frac{3}{7}x - \frac{1}{7}$ _____

$$m = -\frac{3}{7}$$

$$b = (0, -\frac{1}{7})$$

3. $3x + y = -4$ _____ $m = -3$
 $b = (0, -4)$

$$\begin{array}{r} 3x + y = -4 \\ -3x \quad -3x \\ \hline y = -3x - 4 \end{array}$$

Write an equation of a line in slope-intercept form with the given slope and y -intercept. (Example 2)

4. slope: $-\frac{3}{4}$, y -intercept: -2

$$y = -\frac{3}{4}x - 2$$

5. slope: $\frac{5}{6}$, y -intercept: 8

$$y = \frac{5}{6}x + 8$$

State the slope and the y-intercept for the graph of each equation.

Remember → You may need to get y on one side of the equation by itself using inverse operations.

$$y = -3x - 7$$

1. $y = 4x + 1$

2. $y = \frac{5}{6}x - 3$

3. $y = -x + 4$

4. $y + 3x = -7$
 $-3x \quad -3x$

$m = \underline{4}$

$m = \underline{\frac{5}{6}}$

$m = \underline{-1}$

$m = \underline{-3}$

$b = \underline{(0, 1)}$

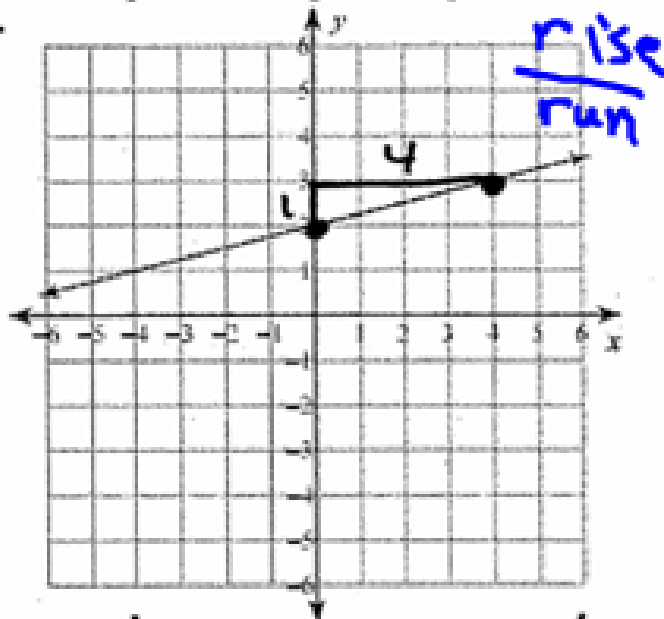
$b = \underline{(0, -3)}$

$b = \underline{(0, 4)}$

$b = \underline{-7} \quad (0, -7)$

Write an equation in slope intercept form for the graphs shown.

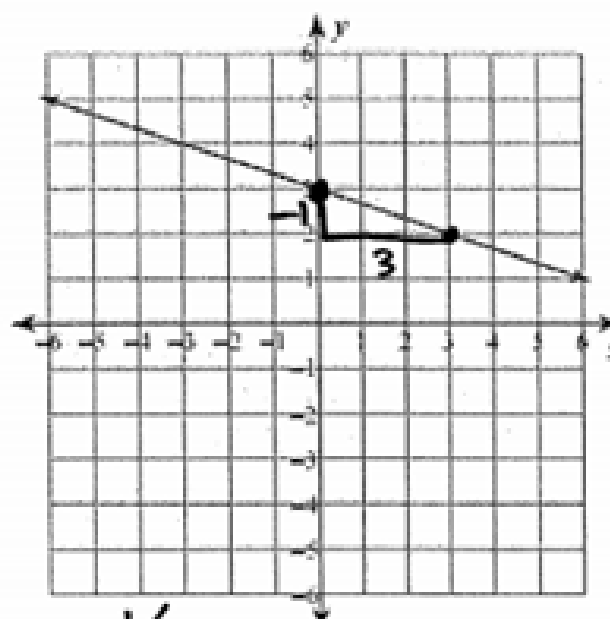
5.



$m = \underline{\frac{1}{4}} \quad b = \underline{(0, 2)}$

Equation → $\underline{y = \frac{1}{4}x + 2}$

6.

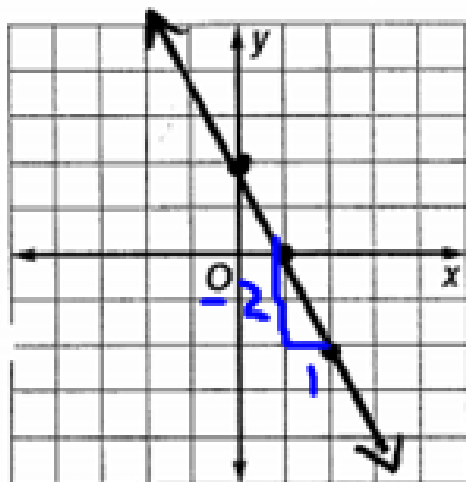


$m = \underline{-\frac{1}{3}} \quad b = \underline{(0, 3)}$

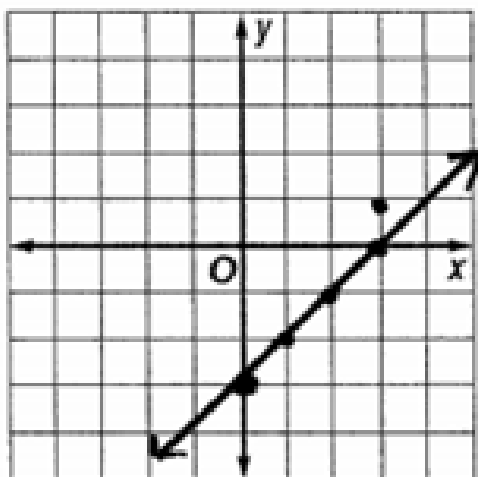
Equation → $\underline{y = -\frac{1}{3}x + 3}$

Graph each equation using the slope and the y-intercept.

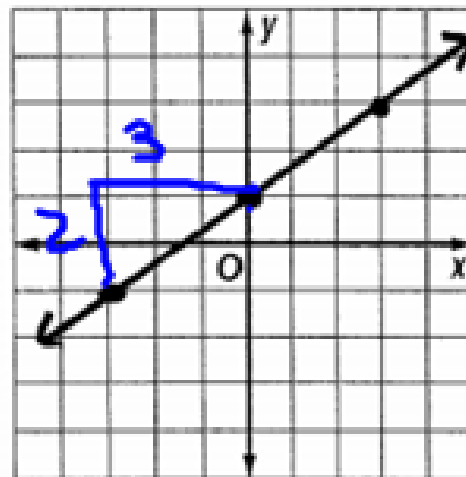
7. $y = -2x + 2$ $m = -2$
 $b = 2$



8. $y = x - 3$ $m = 1$
 $b = (0, -3)$



9. $y = \frac{2}{3}x + 1$ $m = 2/3$
 $b = (0, 1)$



10. **CAMPING** The entrance fee to the national park is \$15. A campsite fee is \$15 per night. The total cost y for a camping trip for x nights can be represented by the equation $y = 15x + 15$.

- a. Graph the equation. $m = \frac{15}{1}$ $b = (0, 15)$ $\$$
- b. Use the graph to find the total cost for 4 nights.

$$\$75 \quad (4, 75)$$

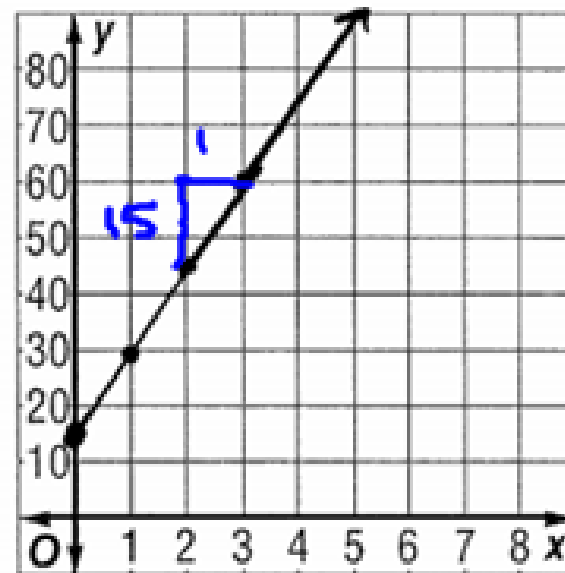
- c. Find the number of nights you would have to stay for the total cost (y) to be \$105.

$$\begin{array}{r} 105 = 15x + 15 \\ -15 \quad -15 \\ \hline 90 = 15x \\ \frac{90}{15} = \frac{15x}{15} \end{array} \quad x = 6 \text{ nights}$$

- d. Interpret the slope and the y -intercept.

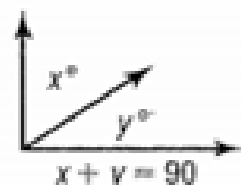
$m = \$15$ is the cost per night to camp

$b = \$15$ is the entrance fee that you have to pay no matter how many nights you camp



nights

11. GEOMETRY Use the diagram shown.



$$x + y = 90$$
$$-x \quad -x$$

a. Rewrite the equation ($x + y = 90^\circ$) in slope-intercept form.

$$y = -x + 90 \quad m = -1 = \frac{-10}{10}$$

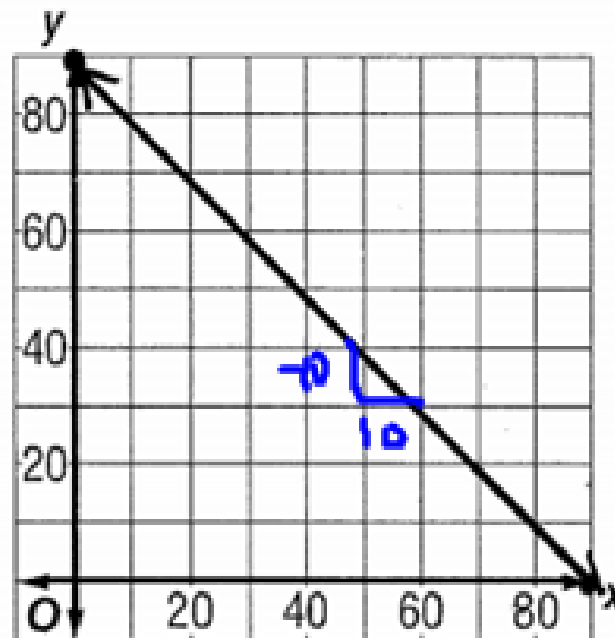
$$y = \underline{-x + 90}$$

b. Graph the equation.

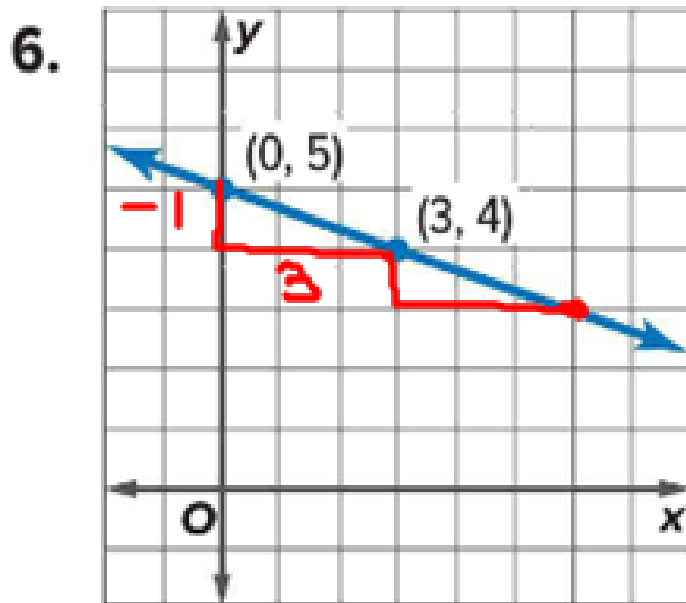
$$b = (0, 90)$$

c. Use the graph to find the value of y if $x = 30$.

$$y = 60$$

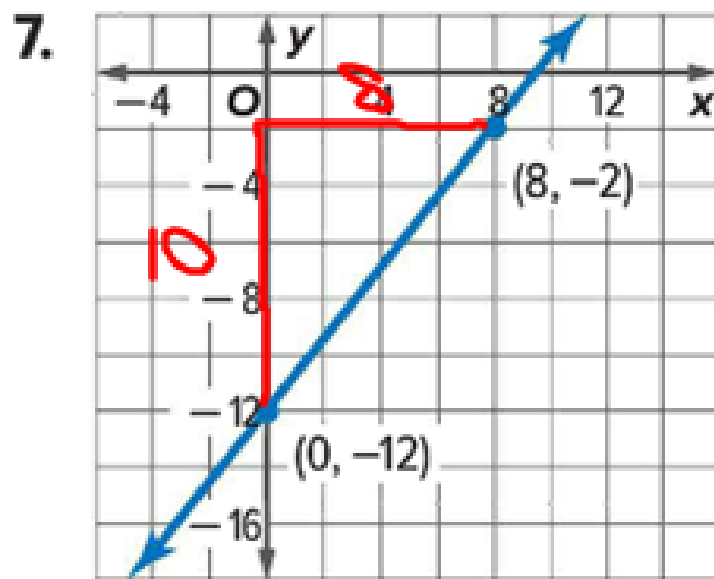


Write an equation in slope-intercept form for each graph shown. $y = mx + b$



$$m = \frac{-1}{3} \quad b = (0, 5)$$

$$y = -\frac{1}{3}x + 5$$



$$m = \frac{10}{8} = \frac{5}{4} = 1\frac{1}{4} = 1.25$$

$$b = (0, -12)$$

$$y = \frac{5}{4}x - 12$$

25. Write an equation in slope-intercept form for the table shown.

		+1	+1	+1	+1	
x	Number of Pizzas	0	1	2	3	4
y	Cost (\$)	5	13	21	29	37
		+8	+8	+8	+8	

$$m = \frac{8}{1} = 8 \quad b = (0, 5)$$

$$y = 8x + 5$$

