

**MODULE 7**

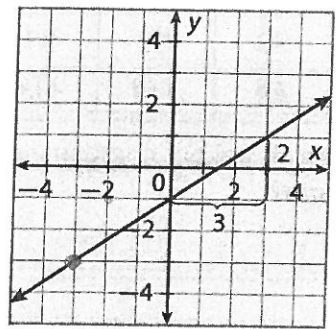
**Linear Equations and Inequalities**

**Applied Module 7 Review**

1. What is an equation in slope-intercept form that represents a line that has a slope of  $-3$  and passes through  $(0, 6)$ ?

- A  $y = -3$
- B  $y = -3x + 6$**
- C  $y = 6x - 3$

2. Line  $r$  is shown on the graph.



Which is the equation of line  $r$ ?

- A  $y + 1 = -\frac{3}{2}(x + 2)$   $(-2, -1)$
- B  $y - 1 = \frac{2}{3}(x + 2)$
- C  $y + 3 = \left(\frac{2}{3}\right)(x + 3)$   $(-3, -3)$**

3. Which equation is equivalent to  $y = \frac{1}{3}x - 5$ ?

- A  $y - 1 = -3(x + 2)$
- B  $y + 1 = \frac{1}{3}(x + 2)$
- C  $y + 1 = \frac{1}{3}(x - 12)$**

$$\begin{array}{r}
 y + 1 = \frac{1}{3}x - 4 \\
 -1 \qquad \qquad -1 \\
 \hline
 y = \frac{1}{3}x - 5
 \end{array}$$

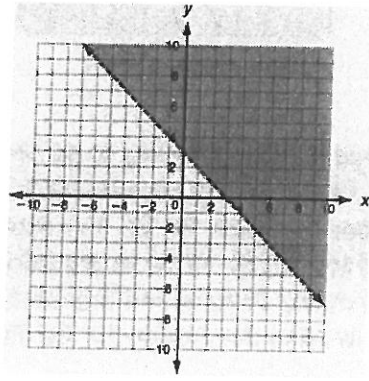
$$\begin{array}{r}
 y + 1 = \frac{1}{3}(x + 2) \\
 y + 1 = \frac{1}{3}x + \frac{2}{3} \\
 -1 \qquad \qquad -1 \\
 \hline
 y = \frac{1}{3}x - \frac{1}{3}
 \end{array}$$

4. The cost of producing  $n$  pairs of shoes is  $p = 15n + 360$ . The shoes cost \$75 a pair, which can be represented by  $c = 75n$ . For how many pairs of shoes does the cost of production equal the sales?

- A 450
- B 60
- C 6**

$$\begin{array}{r}
 15n + 360 = 75n \\
 -15n \qquad -15n \\
 \hline
 360 = 60n \\
 60 \qquad 60 \\
 \hline
 6 = n
 \end{array}$$

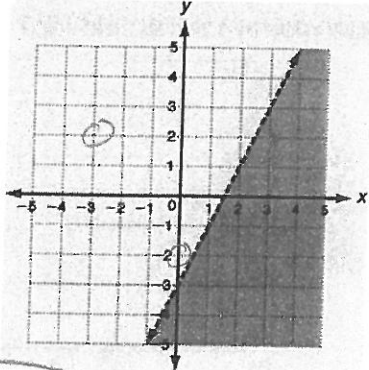
5. Which inequality is represented by the graph shown?



$m = -1$   
 $b = 3$   
 dotted  
 shade above

- A  $y < -x + 3$
- B  $y > -x + 3$**
- C  $y > x + 3$

6. Which ordered pair is a solution of the inequality on the graph?



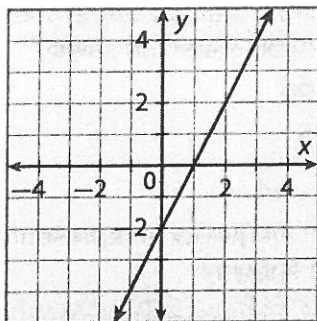
- A  $(3, 2)$**   $\rightarrow$  in the shaded
- B  $(0, -2)$
- C  $(-3, 2)$

**MODULE**  
**7**

**Linear Equations and Inequalities**

**Applied Module 7 Review**

7. Write an equation in slope-intercept form to represent the line shown on the graph below.



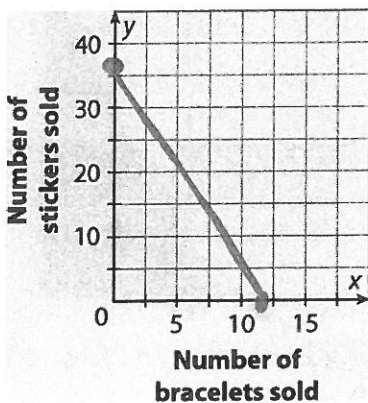
$y = 2x - 2$

8. Tanya is raising money to go on a field trip. She is selling stickers for \$1 and rubber bracelets for \$3. The cost of the field trip is \$36. Write an equation to show how many stickers and bracelets she must sell to raise the money for the field trip.

$x \rightarrow$  bracelets  
 $y \rightarrow$  stickers

$3x + 1y = 36$

9. Graph the equation from Problem 8. If Tanya sells 8 bracelets, how many stickers does she need to sell to raise enough money for the field trip?



$$\begin{array}{r|l} x & y \\ \hline 0 & 36 \\ 12 & 0 \end{array}$$

$\frac{3x = 36}{3} = \frac{36}{3}$   
 $x = 12$

$1y = 36$   
 $y = 36$

10. The function  $f(x)$  represents the amount Bubbies Bakery charges, in dollars, for  $x$  fruit tarts, and  $g(x)$  represents the amount Tasty Treats charges for  $x$  fruit tarts.

$x$	$f(x)$	$g(x)$
12	30	42
24	60	66
36	90	90
48	120	114

- a. Which bakery charges less for 48 tarts?

$g(x) \rightarrow$  Tasty Treats

- b. For how many tarts do the bakeries charge the same amount, and how much do they charge?

36 tarts  $\rightarrow$  \$90

11. Determine whether  $(-4, 3)$  is a solution of  $y \leq -2x - 5$ .

$3 \leq -2(-4) - 5$

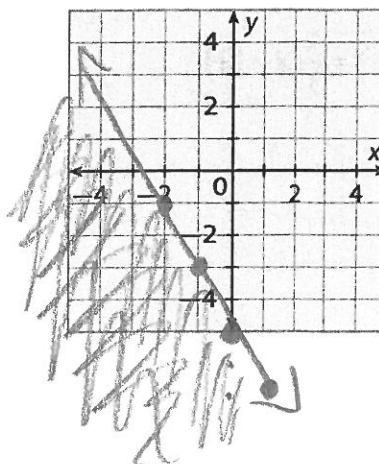
$3 \leq 8 - 5$

$3 \leq 3$

True

yes  $\rightarrow$  solution

12. Graph the inequality represented in Exercise 11.



$b = -5$   
 $m = -2$   
Solid line  
Shade below