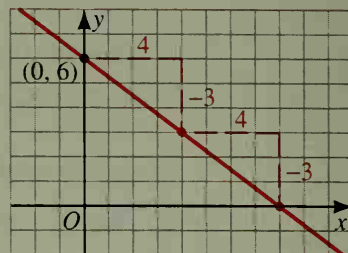


**Example 3** Graph the line  $y = -\frac{3}{4}x + 6$ .

**Solution** The slope is  $-\frac{3}{4}$  and the y-intercept is 6.

*Step 1* Start at the point  $(0, 6)$ .

*Step 2* Use  $\frac{\text{change in } y}{\text{change in } x} = \frac{-3}{4}$  to find other points of the line.  
(See Example 2, page 530.)



## Classroom Exercises

- Which points lie on the line  $3x - 2y = 12$ ?  
a.  $(0, 4)$       b.  $(2, -3)$       c.  $\left(3, \frac{3}{2}\right)$       d.  $(0, -6)$
- Which point is the intersection of  $x + 2y = 8$  and  $2x + 3y = 10$ ?  
a.  $(-2, 5)$       b.  $(-4, 6)$       c.  $(2, 3)$       d.  $(-1, 4)$

Find the x- and y-intercepts of each line.

- $2x + 3y = 6$
- $3x - 5y = 15$
- $-4x + 3y = 24$
- $x + 3y = 9$
- $y = 5x - 10$
- $y = 2x + 5$

Find the slope and y-intercept of each line.

- $y = \frac{2}{5}x - 9$
- $2x + y = 8$
- $3x - 4y = 6$
- What is the slope of the line  $y = 4$ ? Name three points that lie on the line.
- The graph of  $x = 5$  is a vertical line through  $(5, 0)$ . Name three other points on the line and check to see if their coordinates satisfy the equation.

## Written Exercises

- A**
- On the same axes, graph  $y = mx$  for  $m = 2, -2, \frac{1}{2}$ , and  $-\frac{1}{2}$ .
  - On the same axes, graph  $y = mx + 2$  for  $m = 3, -3, \frac{1}{3}$ , and  $-\frac{1}{3}$ .
  - On the same axes, graph  $y = \frac{1}{2}x + b$  for  $b = 0, 2, 4, -2$ , and  $-4$ .
  - On the same axes, graph  $y = -\frac{2}{3}x + b$  for  $b = 0, 3, 6, -3$ , and  $-6$ .
  - On the same axes, graph the lines  $y = 0$ ,  $y = 3$ , and  $y = -3$ .
  - On the same axes, graph the lines  $x = 0$ ,  $x = 2$ , and  $x = -2$ .