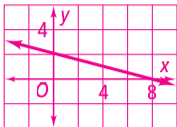
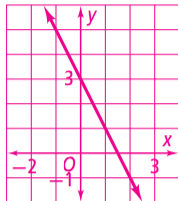


Find the  $x$ - and  $y$ -intercepts for each equation.

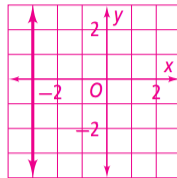
39.  $y = -7x$   
 $x$ -intercept = 0,  
 $y$ -intercept = 0  
 Graph each equation.



40.  $y = \frac{1}{2}x + 3$   
 $x$ -intercept = -6,  
 $y$ -intercept = 3



41.  $-2y = 5x - 12$   
 $x$ -intercept =  $\frac{12}{5}$ ,  
 $y$ -intercept = 6



42.  $x + 4y = 8$

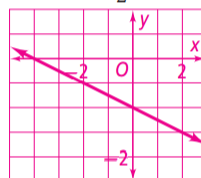
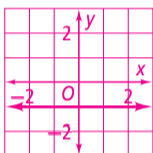
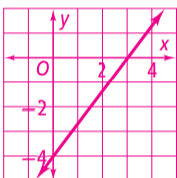
43.  $y - 5 = -2(x + 1)$

44.  $x + 3 = 0$

45.  $4x - 3y = 12$

46.  $y = -1$

47.  $y + 1 = -\frac{1}{2}(x + 2)$



Write an equation in point-slope form for each situation.

48. A train travels at a rate of 70 mi/h. Two hours after leaving the station it is 210 miles from its destination.  $y - 210 = 70(x - 2)$

49. An escalator has a slope of  $\frac{3}{4}$ . After traveling forward 32 feet, the escalator is 24 feet above the floor.  $y - 24 = \frac{3}{4}(x - 32)$

Write an equation in standard form for each situation.

50. Juan can ride his bike at 12 mi/h and walk at 4 mi/h. Write an equation that relates the amount of time he can spend riding or walking combined, to travel 20 miles.  $12b + 4w = 20$

51. You have \$25 to buy supplies for a class party. Juice costs \$3 per bottle and chips cost \$2 per bag. Write an equation that relates the amount of juice and chips you can buy using \$25.  $3j + 2c = 25$

## Lesson 5-6

Write an equation in standard form that satisfies the given conditions.

52. parallel to  $y = 4x + 1$ ,  
 through  $(-3, 5)$   $4x - y = -17$

53. perpendicular to  $y = -x - 3$ ,  
 through  $(0, 0)$   $x - y = 0$

54. perpendicular to  $3x + 4y = 12$ ,  
 through  $(7, 1)$   $4x - 3y = 25$

55. parallel to  $2x - y = 6$ ,  
 through  $(-6, -9)$   $2x - y = -3$

56. parallel to the  $x$ -axis and through  $(4, -1)$   
 $y = -1$

57. through  $(4, 44)$  and parallel to the  $y$ -axis  
 $x = 4$

Tell whether each statement is *true* or *false*. Explain your choice.

58. Two airplanes traveling at the same rate leave an airport 1 hour apart. The graphs of the distance each plane travels will be parallel. **True; the same rate of travel means that slopes of the graphs are the same, so the lines are parallel.**

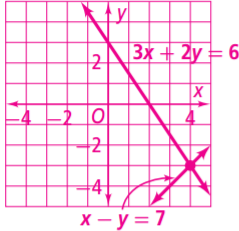
59. Two lines with negative slopes can be perpendicular. **False; the slopes of perpendicular lines have a product of  $-1$ , so one must be positive and the other must be negative.**

## Lesson 6-1

Solve each system by graphing.

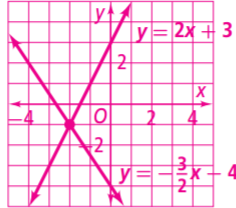
1.  $x - y = 7$

$3x + 2y = 6$  (4, -3)



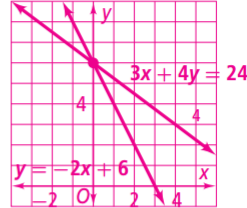
2.  $y = 2x + 3$

$y = -\frac{3}{2}x - 4$  (-2, -1)



3.  $y = -2x + 6$

$3x + 4y = 24$  (0, 6)



Write and solve a system of equations by graphing.

4. One calling card has a \$.50 connection fee and charges \$.02 per minute.  $y = 0.5 + 0.02x$   
 Another card has a \$.25 connection fee and charges \$.03 per minute.  $y = 0.25 + 0.03x$   
 After how many minutes would a call cost the same amount using either card? **25 minutes**

5. Suppose that you have \$75 in your savings account and you save an additional \$5 per week. Your friend has \$30 in his savings account and saves an additional \$10 per week. In how many weeks will you both have the same amount of money in your accounts?  $y = 75 + 5x$   
 $y = 30 + 10x$   
**9 weeks**

## Lesson 6-2

Solve each system by using substitution.

6.  $x - y = 13$  **infinite**  
 $y - x = -13$  **number of solutions**

7.  $3x - y = 4$   $x = 1,$   
 $x + 5y = -4$   $y = -1$

8.  $x + y = 4$   $x = 0,$   
 $y = 7x + 4$   $y = 4$

Write and solve a system of equations by substitution.

9. A farmer grows corn and soybeans on her 300-acre farm. She wants to plant 110 more acres of soybeans than corn. How many acres of each crop does she need to plant?  $c + s = 300$   
 $s = c + 110$   
**corn: 95 acres**  
**soybeans: 205 acres**
10. The perimeter of a rectangle is 34 cm. The length is 1 cm longer than the width. What are the dimensions of the rectangle?  $2\ell + 2w = 34$   
 $\ell = w + 1$   
**9 cm by 8 cm**

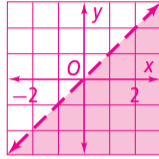
## Lesson 6-5

Determine whether the ordered pair is a solution of the linear inequality.

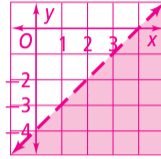
27.  $y > x - 7$ ; (2, 5) **yes**    28.  $x \leq 3$ ; (-2, 6) **yes**    29.  $y \geq 4x + 3$ ; (3, 9) **no**

Graph each linear inequality.

30.  $y < x$



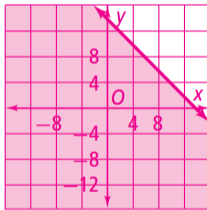
31.  $y < x - 4$



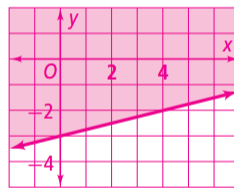
32.  $y > -6x + 5$



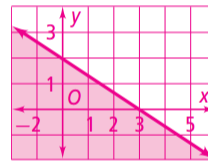
33.  $y \leq 14 - x$



34.  $y \geq \frac{1}{4}x - 3$

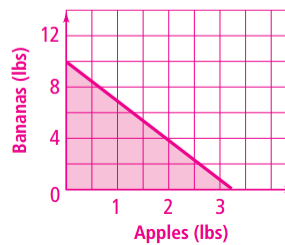


35.  $2x + 3y \leq 6$

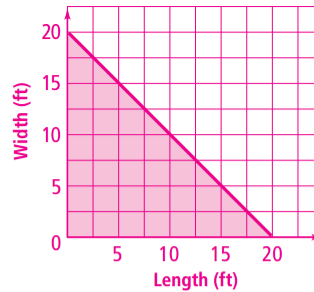


Write and graph a linear inequality for each situation.

36. Suppose you can spend up to \$10 on bananas and apples. Apples cost \$3 per pound and bananas cost \$1 per pound. List three possible combinations of apples and bananas you can buy.  $3a + b \leq 10$   
**Answers may vary. Sample: 1 lb of apples and 3 lbs of bananas, or 2 lbs of apples and 2 lbs of bananas, or 1 lb of apples and 4 lbs of bananas**



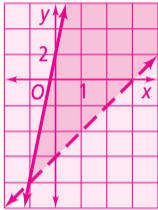
37. Trenton is going to make a rectangular garden in his yard. He wants the perimeter to be no larger than 40 ft. What are three possible sets of dimensions that the garden can have?  $2\ell + 2w \leq 40$   
**Answers may vary. Sample: 5 ft by 10 ft, 8 ft by 7 ft, 2 ft by 11 ft**



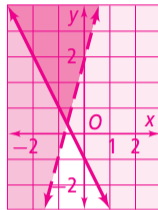
### Lesson 6-6

Solve each system by graphing.

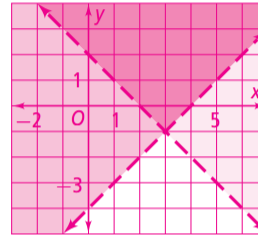
38.  $y \leq 5x + 1$   
 $y > x - 3$



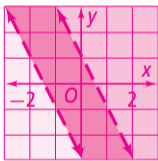
39.  $y > 4x + 3$   
 $y \geq -2x - 1$



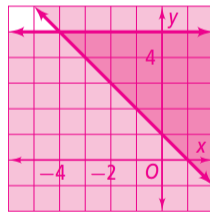
40.  $y > -x + 2$   
 $y > x - 4$



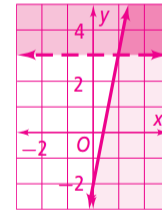
41.  $y < -2x + 1$   
 $y > -2x - 3$



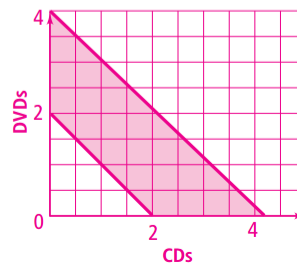
42.  $y \leq 5$   
 $y \geq -x + 1$



43.  $y \leq 5x - 2$   
 $y > 3$



44. Hideo plans to spend no more than \$60 at an entertainment store on DVDs and CDs. DVDs cost \$17 each and CDs cost \$14 each. He wants to buy at least two items. Write and graph a system of linear inequalities that describes the situation. What are three possible combinations of CDs and DVDs that he can buy? Write and graph a system of inequalities that describes the situation.  $17d + 14c \leq 60$   
 $d + c \geq 2$



**Answers may vary. Sample: He can buy 3 CDs and 1 DVD, or 1 CD and 2 DVDs, or 2 CDs and 1 DVD.**