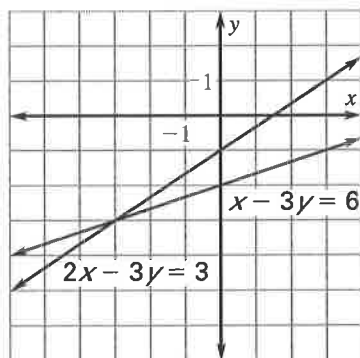


## Answers for 7.1

For use with pages 430–433

### 7.1 Skill Practice

1. solution
2. *Sample answer:* Graph both equations and then estimate the point at which the graphs intersect. Then check whether the point is a solution of each equation.
3. solution      4. not a solution
5. not a solution    6. B
7. B      8. (1, -3)
9. (4, 2)      10. (3, 2)
11. The solution (3, -1) does not satisfy Equation 2. The graph of Equation 2 is incorrect; if properly graphed, the lines would intersect at (-3, -3).



12. (1, 2)      13. (4, 0)
14. (-2, -2)    15. (-3, -5)
16. (1.8, -0.4)    17. (10, -15)

18. (4, 3)      19. (7, -5)
20. (1, -2)      21. (-5, 2)
22. (3, 3)      23. (3, 6)
24. (8, 2)      25. (4, 6)
26. (5, 5)
27. *Sample answer:*  $m = 0$  and  $b = 2$
28. (0.5, 0.5). *Sample answer:* It is important to check the solution because the lines do not intersect at integer values.
29. a. 4      b. 4
- c. *Sample answer:* Each side of the equation is set equal to  $y$ .
- d. *Sample answer:* Set each side of the equation equal to  $y$  to create a system of two equations. Then solve the system using the graph-and-check method.
30. (3, 5), (1, 2), and (5, 1)

### 7.1 Problem Solving

31. 2040
32. B
33. 15 small cards and 10 large cards

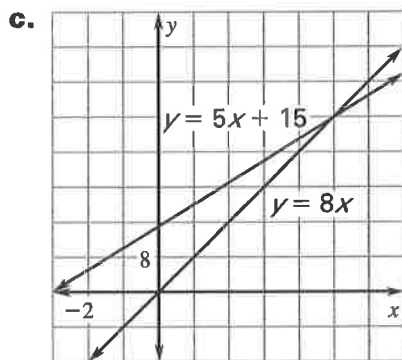
**Answers for 7.1** *continued*  
For use with pages 430–433

- 34. a.** 25 minutes on the stationary bike and 15 minutes on the stair machine  
**b.** 25 minutes on the elliptical trainer and 5 minutes on the stair machine

**35. a.**  $y = 5x + 15$ ,  $y = 8x$

**b.**

Tickets	Cost for members	Cost for non-members
1	\$20	\$8
2	\$25	\$16
3	\$30	\$24
4	\$35	\$32
5	\$40	\$40
6	\$45	\$48



When you rent 6 or more movies. *Sample answer:*  
The graph for a non-member is below the graph for a

member up through 4 movies. For 5 movies, the cost is the same. The graph for members is lower than the graph for non-members for 6 or more movies.

- 36.** You should choose \$25 off if your purchase is less than \$125, and choose 20% off purchases greater than \$125. *Sample answer:*  
For values less than \$125, 20% off is less than \$25 off. For values greater than \$125, 20% off is greater than \$25 off.

**7.1 Mixed Review**

**37.**  $-19$     **38.**  $-3$     **39.**  $-4$

**40.**  $6$     **41.**  $-2.5$     **42.**  $-\frac{11}{3}$

**43.**  $y = \frac{3}{5}x - 5$

**44.**  $y = 7x - 9$

**45.**  $y = 4x - 11$

**46.**  $y = -\frac{4}{3}x + 1$

**47.**  $y = -2x - 7$

**48.**  $y = -\frac{1}{2}x - 6$

## Answers for 7.2

For use with pages 439–441

### 7.2 Skill Practice

1.  $y = x + 1, y = 2x + 1$
2. *Sample answer:* Solve Equation 2 for  $y$ ; the  $y$  term does not have a coefficient.
3. (5, 3)
4. (1, 1)
5. (2, -1)
6. (13, 6)
7. (-4, 5)
8. (3, 22)
9. (6, 7)
10. (8, -7)
11. (2, -2)
12. (-1, 11)
13. (5, -8)
14. (4, 3)
15. (0, 2)
16. (-1, 1)
17. (1.4, -4.4)
18. A
19. *Sample answer:* In Step 3, 6 is substituted for  $y$  instead of  $x$ ;  $y = 9 - 3(6), y = -9$ , the solution is (6, -9).
20. (5, 1)
21. (4, -120)
22. (10.5, 11.75)
23. (3, 7)
24. (14, 10)
25. (6, -3)
26.  $(5\frac{1}{2}, 9)$
27. (0, -6)
28. (12, 10)
29. *Sample answer:* The graphs of the equations should intersect at the solution you found using the substitution method.

30.  $a = 4, b = 5$

### 7.2 Problem Solving

31. 96 bags of popcorn; 48 pretzels
32. 22 tubes for a person and 4 “cooler” tubes
33. 4 in. *Sample answer:* (4, 5) is the solution to the appropriate linear system, so  $x$  should be equal to 4.
34. a. 21.6 sec  
b. Yes. *Sample answer:* After 21.6 seconds they have swam 41.04 meters, so the race is not over.
35. 50 milliliters of 1% hydrochloric acid solution and 50 milliliters of 5% hydrochloric acid solution
36. 12 quarters
37. Yes. *Sample answer:* The cheetah would have to run at 88 feet per second for 23.3 seconds to catch the gazelle.
38. Yes. *Sample answer:* The gardener needs 4.8 bushels of the 50% peat moss and 50% vermiculite mix, and the gardener had 5 bushels.

### 7.2 Mixed Review

39. 9      40. 27      41. 1  
42. 21      43. -4      44. 8

**Answers for 7.2** *continued*  
For use with pages 439–441

**45.**  $2x - 8y = 0, 4x - 16y = 0$

**46.**  $x - 3y = -2, 3x - 9y = -6$

**47.**  $7x + y = -1, -14x - 2y = 2$

**48.**  $x - 2y = 1, -x + 2y = -1$

**49.**  $-x - 6y = 4, x + 6y = -4$

**50.**  $2x + 5y = -1, 12x + 30y = -6$

## Answers for 7.3

For use with pages 447–450

### 7.3 Skill Practice

1. *Sample answer:*  $x + y = 10$ ,  
 $x - y = 5$
2. *Sample answer:* Subtract Equation 2 from Equation 1 then solve the resulting equation for  $y$ . Then substitute the value of  $y$  and solve for  $x$ .
3. (1, 6)                      4. (-3, 29)
5. (-1, -5)                  6. (12, 6)
7. (5, 7)                      8. (-1, 2)
9. (-1, 2)                    10. (-2, 2)
11. (5, 3)                    12. (0, -10)
13. (4, 5)                    14. (-3, 1)
15. C
16. (-15, -62)              17. (2, -3)
18. (-6, -1)                19. (-18, 4)
20. (5, 3)                    21. (4, -3)
22. B
23. *Sample answer:* The two equations should be subtracted rather than added;  $6x = 8$ ,  $x = \frac{4}{3}$ .
24. *Sample answer:* When  $-3x$  is moved to the other side, it should become  $3x$ , the equations should then be subtracted;  
 $3x - 2y = -3$ ,  $3x + 5y = 60$ ,  
 $-7y = -63$ ,  $y = 9$ .
25. (26, 14)                  26. (4, -9)
27. (-4, 12)                28. (5, 8)
29. (-2, 5)                  30. (-2, 0.125)
31. (5, 25)                  32. (10, 6)
33. (-2, 8)
34. a.  $2 = m + b$ ,  $12 = -4m + b$   
b. slope:  $-2$ ;  $y$ -intercept:  $4$   
c.  $y = -2x + 4$
35.  $l = 4.5$  ft,  $w = 2.5$  ft
36. *Sample answer:* First solve Equation 1 and 2 using elimination. Then check the solution for all three equations.
37. (0, 2)
38. *Sample answer:* Subtract Equation 2 from Equation 1 to solve for  $y$ . Then substitute  $y$  into Equation 3 to solve for  $x$ . Then substitute  $x$  and  $y$  into Equation 1 or Equation 2 to solve for  $z$ . Check solution in all three equations.

**Answers for 7.3** *continued*  
For use with pages 447–450

**7.3 Problem Solving**

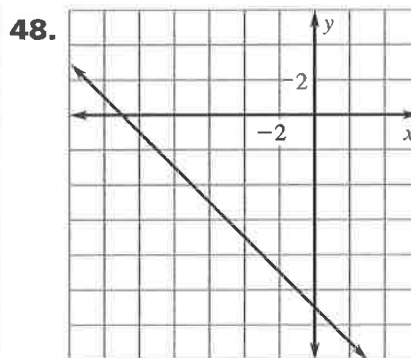
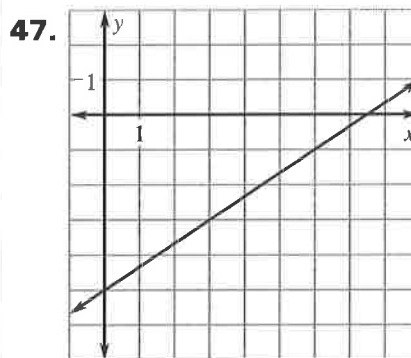
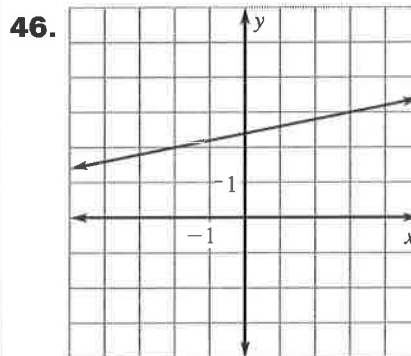
- 39.** speed in still water: 4.6 m/sec,  
speed of current: 0.3 m/sec
- 40.** flat fee: \$14.95,  
cost of oil: \$1.50/quart
- 41.** monophonic ring tone: \$1.95,  
polyphonic ring tone: \$3.50
- 42. a.** Let  $x$  represent the number  
of twigs and  $y$  represent the  
number of flowers;  
 $x + 3y = 15$ ,  $x + y = 9$ ,  
6 twigs and 3 flowers.

**b.**

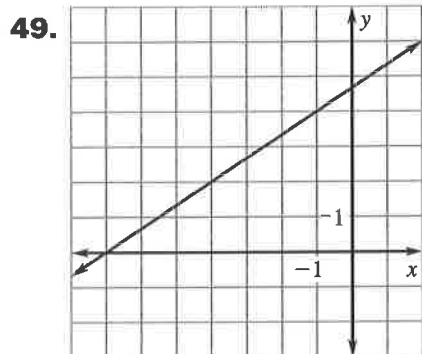
Flowers	Twigs	Cost
0	9	\$9
1	8	\$11
2	7	\$13
3	6	\$15
4	5	\$17
5	4	\$19

- 43. a.** flight to Phoenix: 400 mi/h,  
flight to Charlotte: 450 mi/h
- b.**  $s + w = 450$ ,  $s - w = 400$ ;  
plane: 425 mi/h, wind: 25 mi/h
- 44.** \$3248. *Sample answer:*  
Each cap-and-gown costs \$14 and  
each extra tassel costs \$3.50.
- 45.** ideal sleeve length: 63.5 cm,  
allowable deviation: 1.3 cm

**7.3 Mixed Review**



**Answers for 7.3** *continued*  
For use with pages 447–450



50.  $(2, -1)$       51.  $(6, 2)$   
52.  $(0, 6)$       53. 36  
54. 72              55. 60

## Answers for 7.4

For use with pages 454–458

### 7.4 Skill Practice

1. 36
2. *Sample answer:* Multiply Equation 1 by 3 and add to Equation 2. Then solve for  $x$  and substitute to find  $y$ .
3. (1, 1)                      4. (5, 6)
5. (5, -4)                    6. (19, 16)
7. (2, 1)                      8. (8, 3)
9. (-7, -12)                10. (-17, 5)
11. (5, 6)                     12. (-6, 10)
13. (4, 4)                    14. (1, 2)
15. (5, -3)                  16. (7, 6)
17.  $(4\frac{2}{7}, 5)$                 18. D
19. *Sample answer:* The two equations should be subtracted rather than added;  $-x = -9$ ,  $x = 9$ .
20. *Sample answer:* The right side of the equations were not multiplied;  $27x + 24y = 33$ ,  $28x + 24y = 36$ ,  $-x = -3$ ,  $x = 3$ .
21. (2, -1)                    22.  $(3\frac{4}{11}, -\frac{10}{11})$
23.  $(-4\frac{5}{22}, -2\frac{1}{11})$
24. (-1, 2)                    25. (5, 4)

26. (-2, 7)                    27. (10, 2)
28. (20, 10)                  29. (2, -1)
30. (2, -2)                    31.  $(\frac{1}{3}, -\frac{2}{3})$
32. (10, 12)
33. a.  $2l + 2w = 18$ ,  $6l + 4w = 46$   
b. length: 15 in., width: 8 in.
34. 4 and -4. *Sample answer:*  
For these values, you can add or subtract to eliminate the  $x$  term.
35.  $a = 3$ ,  $b = 4$
36.  $a = 6$ ,  $b = 8$

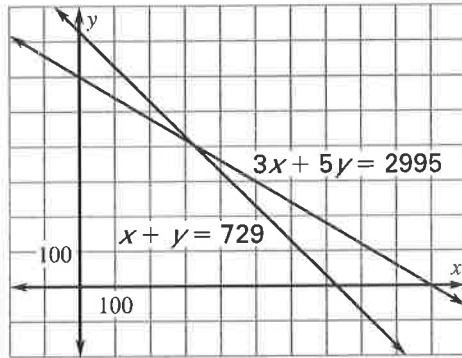
### 7.4 Problem Solving

37. 5 hardcover books
38. \$.99; \$9.99
39. 21 pies, 16 batches of applesauce
40. a. Let  $x$  represent the number of student tickets and  $y$  represent the number of adult tickets;  
 $3x + 5y = 2995$ ,  $x + y = 729$ ,  
325 student tickets and 404 adult tickets.



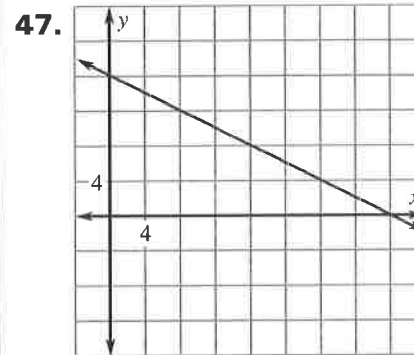
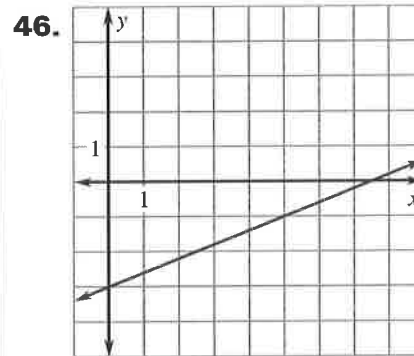
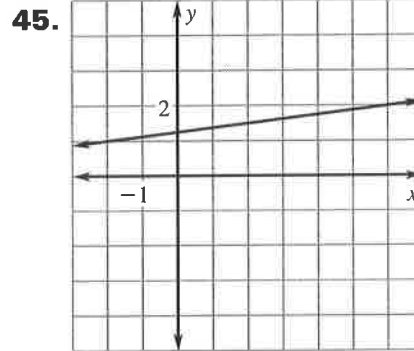
**Answers for 7.4** *continued*  
For use with pages 454–458

40. b.

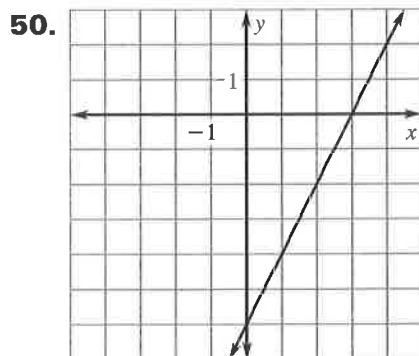
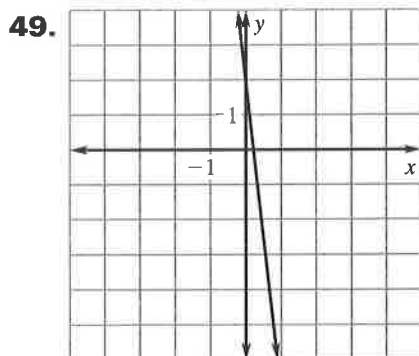
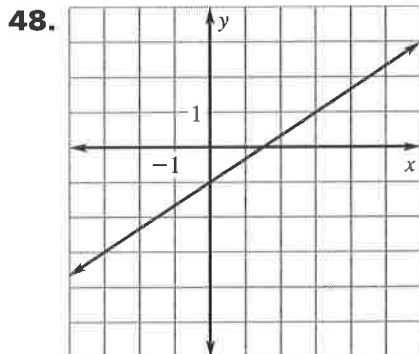


41. \$16.50; a small costs \$2.90, and a large costs \$3.90;  
 $3(2.90) + 2(3.90) = 16.50$
42. *Sample answer:* Two cars are traveling on the same route. One car leaves 30 minutes before the other car and travels at a rate of 40 miles per hour. If the other car travels 45 miles per hour, how many hours will it take for the second car to catch the first car?  
4 h, the second car will have to travel 4 hours in order to catch the first car.
43. \$800; \$1200
44. first leg: 60 mi/h,  
second leg; 45 mi/h

**7.4 Mixed Review**



**Answers for 7.4** *continued*  
For use with pages 454–458



51. *b* and *c*      52. *a* and *c*  
53. (2, -1)      54. (5, 10)  
55. (-6, 3)      56. (8, -3)  
57. (-1, 1)      58. (0.5, 1)

**7.1–7.4 Mixed Review of Problem Solving**

1. a. first leg: 60 km/h,  
second leg: 75 km/h  
b.  $r - w = 60, r + w = 75$   
c. speed in still air: 67.5 km/h,  
wind speed: 7.5 km/h
2. \$12. *Sample answer:* Potato salad costs \$3.25 per pound, and coleslaw costs \$2.75 per pound. So 2 pounds of each costs \$12.
3. 4 months;

			4
	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

## Answers for 7.4 *continued*

For use with pages 454–458

- 4.** *Sample answer:* You have \$75 to spend on 10 items. Small items cost \$5 each and large items cost \$10 each. How many of each item can you buy? Linear system:  
 $5x + 10y = 75$ ,  $x + y = 10$ .  
Solution:  $x = 5$ ,  $y = 5$ . You can buy 5 small items and 5 large items for \$75.
- 5.** No. *Sample answer:*  
After 30 minutes the balloon from Newman Park remains higher than the balloon from Kirby Park.
- 6. a.**  $0.1x + 0.3y = 0.2 \cdot 500$ ,  
 $x + y = 500$
- b.** 250 milliliters of 10% acid and 90% water mix, and 250 milliliters of the 30% acid and 70% water mix.
- c.** More of the 10% acid and 90% water mix.  
*Sample answer:* Adding more of the 30% acid and 70% water mix would raise the percent of acid, not lower it.