

# Answers for 1.7

For use with pages 55–59

## 1.7 Skill Practice

1. An apparent solution that must be rejected because it does not satisfy the original equation.

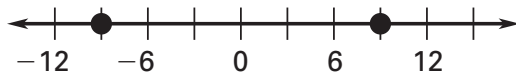
2. *Sample answer:* If  $x$  is negative then  $-x$  would be positive.

3. solution      4. not a solution

5. not a solution      6. solution

7. solution      8. solution

9.  $-9, 9$

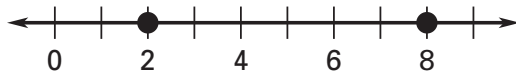


10. no solution

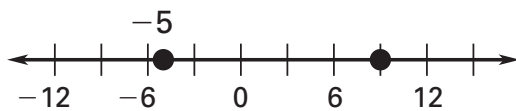
11. 0



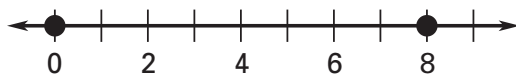
12. 2, 8



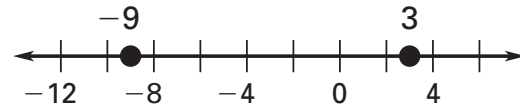
13.  $-5, 9$



14. 0, 8



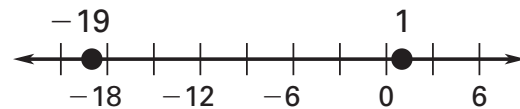
15.  $-9, 3$



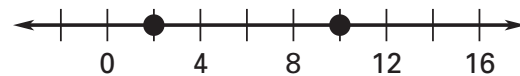
16.  $-6, -4$



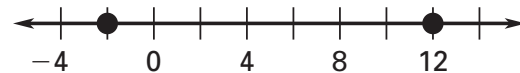
17.  $-19, 1$



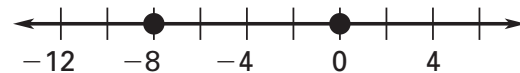
18. 2, 10



19.  $-2, 12$



20.  $-8, 0$



21.  $-4, 9$

22.  $-7, -2\frac{1}{3}$

23.  $\frac{6}{7}, 2$

24.  $-5, 9$

25.  $-7, 4$

26.  $-12\frac{1}{2}, 9$

27.  $-7, 2$

28.  $-5, 9$

29.  $1\frac{4}{9}, 3$

30.  $-28, 52$

31.  $-20, 4$

32.  $-9, 27$

# Answers for 1.7 *continued*

For use with pages 55–59

**33.** No; the equation has no solutions because an absolute value will never be negative.

**34.** 1, 2

**35.** -3

**36.**  $\frac{1}{2}$ ,  $\frac{1}{14}$

**37.**  $-1\frac{1}{2}$ ,  $-\frac{1}{2}$

**38.**  $-\frac{1}{5}$

**39.**  $-\frac{1}{6}$ ,  $-3\frac{3}{4}$

**40.** D

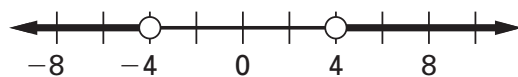
**41.** When writing the second equation, the right side of the equation should be  $-x - 3$ ;  $5x - 9 = -x - 3$ ,  $6x - 9 = -3$ ,  $6x = 6$ ,  $x = 1$ , the solutions are 3 and 1.

**42.** -3 is an extraneous solution; the solution is 2.

**43.**  $-5 \leq j \leq 5$



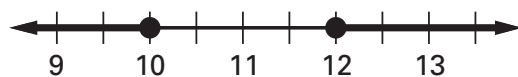
**44.**  $k < -4$  or  $k > 4$



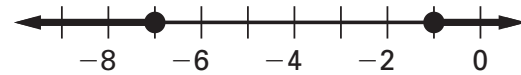
**45.**  $-5 < m < 9$



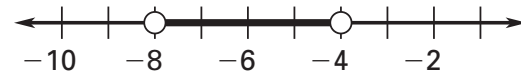
**46.**  $n \leq 10$  or  $n \geq 12$



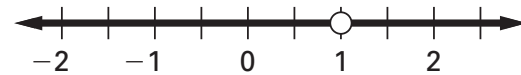
**47.**  $d \leq -7$  or  $d \geq -1$



**48.**  $-8 < f < -4$



**49.**  $g < 1$  or  $g > 1$



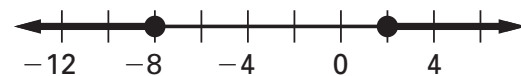
**50.**  $-20 \leq h \leq 0$



**51.**  $-5 < w < 15$



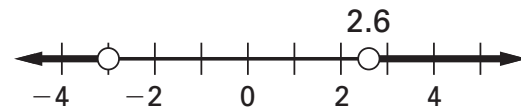
**52.**  $x \leq -8$  or  $x \geq 2$



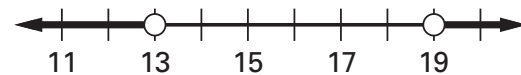
**53.**  $0.5 \leq y \leq 4$



**54.**  $z < -3$  or  $z > 2.6$



**55.**  $p < 13$  or  $p > 19$



**Answers for 1.7** *continued*  
For use with pages 55–59

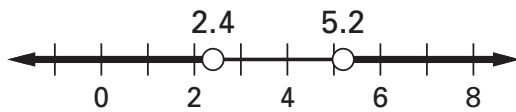
**56.**  $13 \leq q \leq 35$



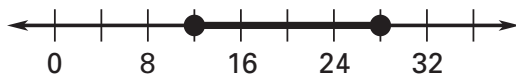
**57.**  $-6 < r < 13$



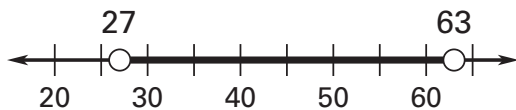
**58.**  $t < 2.4$  or  $t > 5.2$



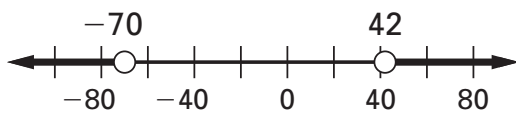
**59.**  $12 \leq x \leq 28$



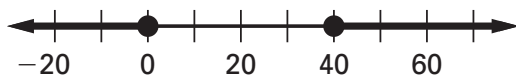
**60.**  $27 < m < 63$



**61.**  $-70 < y < 42$



**62.**  $n \leq 0$  or  $n \geq 40$

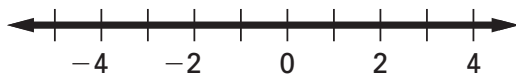


**63.** C

**64.** C

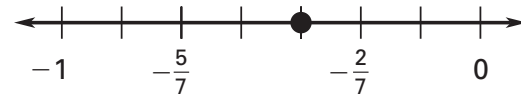
**65.**  $c > 0, c = 0, c < 0$

**66.** all real numbers



**67.** no solution

**68.**  $-\frac{3}{7}$



**69.**  $x < 9$  or  $x > 9$



**70.**  $\frac{-c-b}{a} < x < \frac{c-b}{a}$

**71.**  $x \leq \frac{-c-b}{a}$  or  $x \geq \frac{c-b}{a}$

**72.**  $\frac{c-b}{a} \leq x \leq \frac{-c-b}{a}$

**73.**  $x < \frac{c-b}{a}$  or  $x > \frac{-c-b}{a}$

**1.7 Problem Solving**

**74.**  $|h - 110.25| \leq 0.4$

**75.**  $|p - 6.5| \leq 1$

**76. a.**  $|p - 0.85| \leq 0.05$

**b.**  $0.8 \leq p \leq 0.9$

**c.** about 15.2%, 18%

**77.**  $|b - 21| > 1$

**Answers for 1.7** *continued*  
For use with pages 55–59

**78. a.** Nearsightedness:

Mild:  $-1.5 < x + 1.5 < 1.5$ ,  
 $-3 < x < 0$ ;

Moderate:

$-1.5 < x + 4.5 < 1.5$ ,  
 $-6 < x < -3$ ;

Severe:  $-1.5 < x + 7.5 < 1.5$ ,  
 $-9 < x < -6$ ;

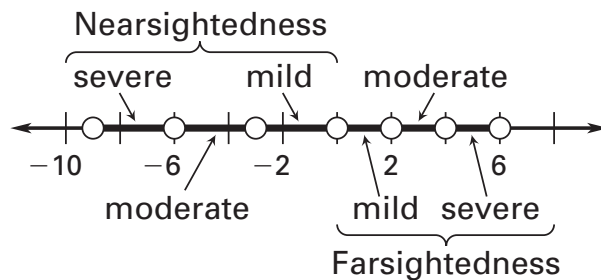
Farsightedness:

Mild:  $-1 < x - 1 < 1$ ,  $0 < x < 2$ ;

Moderate:  $-1 < x - 3 < 1$ ,  
 $2 < x < 4$ ;

Severe:  $-1 < x - 5 < 1$ ,  $4 < x < 6$

**b.**



**79.**  $|x - 45| \leq 15$

**80.**  $|t - 600| \leq 50$

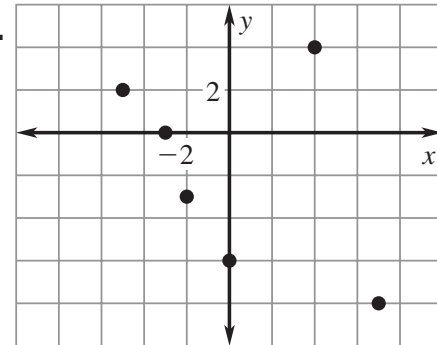
**81.**  $|e - 6008| \leq 5992$ ,  
 $|m - 46,000| \leq 45,000$

**82. a.**  $-0.05x \leq x - 250 \leq 0.05x$

**b.**  $238 \leq x \leq 263$ ; the actual depths are between 238 feet and 263 feet.

**1.7 Mixed Review**

**83–88.**



**89.** 14

**90.** 6

**91.** 17

**92.** -25

**93.** -17

**94.** -35

**95.**  $y = -5x + 14$ ; -26

**96.**  $y = 3x + 12$ ; -15

**97.**  $y = 2x - 8$ ; -14

**98.**  $y = \frac{2}{5}x + \frac{11}{5}$ ;  $6\frac{1}{5}$

**1.5–1.7 Mixed Review of Problem Solving**

**1. a.**  $60g + 51(12 - g) = 675$

**b.** city: 7 gal; highway: 5 gal

**c.** city: 420 mi; highway: 255 mi

**2. a.**  $|p - 3.5| \leq 0.25$

**b.**  $3.25 \text{ oz} \leq p \leq 3.75 \text{ oz}$

# Answers for 1.7 *continued*

For use with pages 55–59

3. a.  $d = -1.5x + 12$

b. 8 h

c. No; after the pool is empty the depth will be zero and there can not be a negative depth in the pool.

4. 24 in.

*Sample answer:* 12 in. and 36 in.

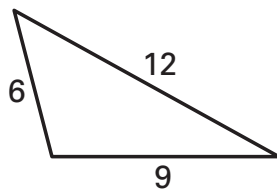
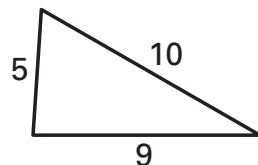
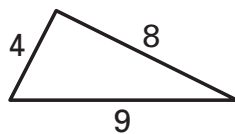
5. The special deal is a better offer if you rent more than 5 movies per month;  $2.95x \geq 15.95$ ,  $x \geq 5.4$ .

6. a.  $x + 9 > 2x$ ,  $3x > 9$ ,  $9 + 2x > x$

b.  $x < 9$ ,  $x > 3$ ,  $x > -9$

c.  $3 < x < 9$

d. *Sample:*



7.  $-369^\circ\text{F} \leq x \leq -297^\circ\text{F}$ ,  
 $-187^\circ\text{C} \leq x \leq -147^\circ\text{C}$

8. 26 field goals;

		2	6
	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