p. 1 (#1-6)

1. $11 + b$;

$$\begin{aligned} 3 + (b + 8) &= 3 + (8 + b) && \text{Comm. Prop. of Add.} \\ &= (3 + 8) + b && \text{Assoc. Prop. of Add.} \\ &= 11 + b && \text{Add 3 and 8.} \end{aligned}$$

2. $d + 10$;

$$\begin{aligned} (d + 4) + 6 &= d + (4 + 6) && \text{Assoc. Prop. of Add.} \\ &= d + 10 && \text{Add 4 and 6.} \end{aligned}$$

3. $30p$;

$$\begin{aligned} 6(5p) &= (6 \cdot 5)p && \text{Assoc. Prop. of Mult.} \\ &= 30p && \text{Multiply 6 and 5.} \end{aligned}$$

4. 0;

$$\begin{aligned} 13 \cdot m \cdot 0 &= 13 \cdot 0 \cdot m && \text{Comm. Prop. of Mult.} \\ &= (13 \cdot 0) \cdot m && \text{Assoc. Prop. of Mult.} \\ &= 0 \cdot m && \text{Mult. Prop. of Zero} \\ &= 0 && \text{Mult. Prop. of Zero} \end{aligned}$$

5. $29x$;

$$\begin{aligned} 1 \cdot x \cdot 29 &= 1 \cdot 29 \cdot x && \text{Comm. Prop. of Mult.} \\ &= (1 \cdot 29) \cdot x && \text{Assoc. Prop. of Mult.} \\ &= 29x && \text{Mult. Prop. of One} \end{aligned}$$

6. $n + 14$;

$$\begin{aligned} (n + 14) + 0 &= n + (14 + 0) && \text{Assoc. Prop. of Add.} \\ &= n + 14 && \text{Add. Prop. of Zero} \end{aligned}$$

pp. 6-7 (#6, 7, 14, 23, 24, 25, 27, 31, 33, 36, 37, 45)

6. 10

7. 10

14. 0

23. $|-4| > -6$

24. $|-1| < |-8|$

25. $|5| = |-5|$

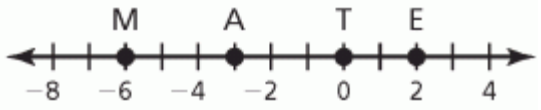
27. Because $|-5| = 5$, the statement is incorrect. $|-5| > 4$

31. $-7, -6, |5|, |-6|, 8$

33. $-17, |-11|, |20|, 21, |-34|$

36. -15

37. **a.** MATE



b. TEAM

45. false; The absolute value of zero is zero, which is neither positive nor negative.

pp. 12-13 (#10, 13, 21, 29, 31, 37, 41, 44, 45, 46)

10. -5

13. 0

21. -4

29. Use the Associative Property to add 13 and -13 first. -8

31. *Sample answer:* Use the Commutative Property to switch the last two terms. -12

37. 21

41. *Sample answer:* $-26 + 1; -12 + (-13)$

44. 9

45. $d = -10$

46. $b = 2$

pp 18-19 (#8-11, 20, 22, 27, 28, 32, 43-46)

8. -3

9. 13

10. 1

11. -5

20. 0

22. 38

27. 6

28. -1

32. -11

43. sometimes; It's positive only if the first integer is greater.

44. sometimes; It's positive only if the first integer is greater.

45. always; It's always positive because the first integer is always greater.

46. never; It's never positive because the first integer is never greater.

p. 21 (#1-13)

1. $|-8| > 3$
2. $7 = |-7|$
3. $-6, -4, 3, |-4|, |-5|$
4. $-10, -8, |-9|, 12, |-15|$
5. -11
6. 12
7. -6
8. 0
9. 1
10. 13
11. a. $-10, -7$

    b. -7

    c. -10
12. yes; They raised $1129.
13. $130°F$

pp. 26-27 (#9-11, 17, 20, 21, 26, 29, 39, 43, 44, 45)

9. -21

10. -16

11. 12

17. 0

20. -110

21. 78

26. 48

29. -700

39. The answer should be negative.
$-10^2 = -(10 \cdot 10) = -100$

43. -7500, 37,500

44. 1792, -7168

45. -12

pp. 32-33 (#9-15, 21, 34-36)

9. -3

10. -5

11. 6

12. -2

13. 0

14. 3

15. -6

21. undefined

34. -10

35. 4

36. $-8, 4$; Divide the previous number by -2 to obtain the next number.

pp. 35-37 (#3, 4, 6-12, 16, 17, 20, 22)

3. 17

4. 8

6. -27

7. -10

8. 25

9. -34

10. -10

11. -11

12. -25

16. -70

17. 18

20. 7

22. -12

pp. 48-49 (#12, 13, 18, 20, 21, 26, 33, 34, 39, 40, 45)

12. $0.\overline{09}$

13. $-0.\overline{7}$

18. $8.6\overline{81}$

20. $-\frac{9}{10}$

21. $\frac{9}{20}$

26. $6\frac{3}{250}$

33. $-2.4,\ -2.25,\ -\frac{11}{5}, \frac{15}{10},\ 1.6$

34. **a.** -0.55

b. $-\frac{11}{20}$

39. $-4\frac{6}{10} > -4.65$

40. $-5\frac{3}{11} < -5.\overline{2}$

45. No; The base of the skating pool is at -10 feet, which is deeper than $-9\frac{5}{6}$ feet.

pp. 54-55 (#5, 9-11, 14, 19, 20, 22, 24)

5. $-1\frac{4}{5}$

9. $-\frac{7}{12}$

10. -3.45

11. 1.844

14. The sum of the numerators is incorrect.

$$-\frac{5}{8}+\frac{1}{8}=\frac{-5+1}{8}=\frac{-4}{8}=-\frac{1}{2}$$

19. $\frac{1}{2}$

20. $-\frac{7}{8}$

22. -2.6

24. The sum will be positive when the addend with the greater absolute value is positive. The sum will be negative when the addend with the greater absolute value is negative. The sum will be zero when the numbers are opposites.

pp. 62-63 (#6, 8, 9, 11-14, 20, 21, 28, 29)

6. $-6\frac{2}{3}$

8. $\frac{1}{18}$

9. -2.6

11. 14.963

12. They did not use the least common denominator.

$$\begin{aligned}\frac{3}{4}-\frac{9}{2} &= \frac{3}{4}-\frac{18}{4}\\ &= \frac{3-18}{4}\\ &= \frac{-15}{4}\\ &= -3\frac{3}{4}\end{aligned}$$

13. $3\frac{1}{4}$

14. 10.6

20. $-3\frac{9}{10}$

21. The difference is an integer when (1) the decimals have the same sign and the digits to the right of the decimal point are the same, or (2) the decimals have different signs and the sum of the decimal parts of the numbers add up to 1.

28. sometimes; It is positive only if the first fraction is greater.

29. always; It is always positive because the first decimal is always greater.

p. 68 (#22-31)

22. $\frac{1}{3}$

23. $-\frac{4}{9}$

24. $2\frac{1}{2}$

25. 9

26. -0.012

27. 0.025

28. 0.36

29. $8\frac{1}{4}$

30. $-4\frac{17}{27}$

31. The answer should be negative. $-2.2 \times 3.7 = -8.14$

p. 68 (#10-15, 32)

10. $-1\frac{3}{4}$

11. $-\frac{2}{3}$

12. 1

13. $-\frac{1}{100}$

14. $\frac{2}{5}$

15. $2\frac{5}{14}$

32. The wrong fraction was inverted.

$$-\frac{1}{4} \div \frac{3}{2} = -\frac{1}{4} \times \frac{2}{3}$$

$$= -\frac{2}{12}$$

$$= -\frac{1}{6}$$

p. 68 (#16-21)

16. -1.25

17. $3.\overline{63}$

18. 0.23

19. -6

20. -2.45

21. -2.5875

pp. 71-73 (#2, 3, 5, 8-11, 13, 14, 17, 19, 20, 23, 25)

2. 0.625

3. $-2.1\overline{6}$

5. $-\frac{3}{5}$

8. $24\frac{23}{100}$

9. $\frac{1}{10}$

10. $-3\frac{2}{3}$

11. -4

13. $2\frac{7}{8}$

14. 11.25

17. $-1\frac{3}{11}$

19. 6.16

20. $\frac{28}{81}$

23. -23.67

25. 16