

## Chapter 1 Supplementary Problems

Find each sum.

**1.**  $3,289 + 6,573$

**3.**  $984 + 321$

**5.**  $64,829 + 92,081$

**2.**  $324,905 + 8,713$

**4.**  $5,075 + 837$

**6.**  $573 + 43,807$

Find each difference.

**7.**  $12,306 - 8,729$

**9.**  $625 - 98$

**11.**  $485,287 - 251,876$

**8.**  $5,537 - 723$

**10.**  $329,610 - 32,106$

**12.**  $3,082 - 93$

Find each product.

**13.**  $589 \times 251$

**15.**  $67 \times 32$

**17.**  $630 \times 8$

**14.**  $41 \times 57$

**16.**  $24 \times 9$

**18.**  $49 \times 34$

Find each quotient. Remember to write any remainder as part of the quotient.

**19.**  $5,544 \div 66$

**21.**  $166 \div 40$

**23.**  $10,908 \div 8$

**20.**  $576 \div 24$

**22.**  $23,137 \div 32$

**24.**  $756 \div 36$

Estimate each answer.

**25.**  $82,573 + 15,987$

**28.**  $192,309 - 47,367$

**26.**  $614 \times 321$

**29.**  $73,582 \div 67$

**27.**  $5,920 + 5,231$

**30.**  $25,308 \div 39$

Tell whether each statement is *true*, *false*, or *open*.

**31.**  $24 - n = 15$

**33.**  $826n = 24,078$

**35.**  $64 \div 8 = n$

**32.**  $11 \times 11 = 111$

**34.**  $12 + 3 = 36$

**36.**  $634 \times 7 = 4,438$

Classify each expression as *numerical* or *algebraic*. Then name the operation(s) and identify any variables.

**37.**  $816 \div 15$

**40.**  $w \div 33$

**38.**  $15x$

**41.**  $4 + 3 \times 9$

**39.**  $3y - 14$

**42.**  $5a + 6$

Evaluate each expression.

**43.**  $16 + n$  when  $n = 14$ .

**45.**  $49 - z$  when  $z = 13$ .

**44.**  $125 \div c$  when  $c = 5$ .

**46.**  $16 - 3n$  when  $n = 3$ .

Write *true* or *false*.

**47.**  $3m = 42$  when  $m = 15$ .

**49.**  $y \div 42 = 6$  when  $y = 252$ .

**48.**  $24 - e = 9$  when  $e = 15$ .

**50.**  $31 + n = 49$  when  $n = 80$ .

## Chapter 2 Supplementary Problems

Identify place or value.

1. the place of 6 in the decimal 135.0861
2. the value of 3 in the decimal 8,346.05
3. the place of 4 in 267.0914
4. the value of 9 in 89.43

Add or subtract.

5.  $0.978 + 6.84$
6.  $4.7301 - 2.73$
7.  $8 - 0.318$
8.  $\$80 - \$29.98$
9.  $35.45 + 1.035$
10.  $6.4 + 5.31 + 0.675$

Multiply. Round to the nearest thousandth when necessary.

11.  $200 \times 8.183$
12.  $0.497 \times 3.25$
13.  $\$16.88 \times 3.75$
14.  $84.51 \times 6.2$
15.  $4.135 \times 6.512$
16.  $6.57 \times 10^3$

Divide. If necessary, round to the nearest thousandth.

17.  $32.6 \div 100$
18.  $651 \div 9.3$
19.  $32.9 \div 0.4$
20.  $94.58 \div 3.6$
21.  $57.81 \div 10^2$
22.  $64.4 \div 10^3$

Write each decimal as a fraction. Simplify your answer.

**23.** 0.750

**25.** 0.375

**24.** 0.500

**26.** 0.120

Write each fraction as a decimal. Round to the nearest hundredth if necessary.

**27.**  $\frac{3}{11}$

**29.**  $\frac{27}{100}$

**28.**  $\frac{15}{16}$

**30.**  $\frac{7}{9}$

Find the interest earned. Use the formula  $I = prt$ .

**31.** What is the interest earned on \$32,000 at  $6\frac{1}{2}\%$  for 5 years?

**32.** What is the interest earned on \$2,500 at 5.3% for 4 years?

Evaluate each expression. Round to the nearest hundredth if necessary.

**33.**  $y + 3.14$  when  $y = 12.84$

**34.**  $2l + 2w$  when  $l = 4.6$  and  $w = 6.25$

**35.**  $4.5c - 6.9b$  when  $c = 4.6$  and  $b = 2.4$

**36.**  $x \div 3.2$  when  $x = 45.73$

Write *true* or *false*.

**37.** Is  $4.2s = 25.2$  a *true* or *false* statement when  $s = 6$ ?

**38.** Is  $403.2 \div s = 4.2$  a *true* or *false* statement when  $s = 9.6$ ?

**39.** Is  $21.7 + s = 38.1$  a *true* or *false* statement when  $s = 16.4$ ?

**40.** Is  $s + 0.375 = 0.380$  a *true* or *false* statement when  $s = 5$ ?

## Chapter 3 Supplementary Problems

Evaluate each statement. Write *true* or *false*.

1.  $6|32$

4.  $3|265$

7.  $8|448$

2.  $7|84$

5.  $4|76$

8.  $9|4,509$

3.  $10|3,560$

6.  $2|843$

Is each number divisible by 2? by 3? by 4? by 5? by 6? by 8? by 9? by 10?

9. 84

11. 3,120

10. 430

12. 32,022

Decide whether each number is *prime* or *composite*.

13. 123

15. 101

14. 196

16. 187

Find the greatest common divisor.

17. (21, 28)

19. (3y, 42)

18. (6, 16)

20. (8, 64a)

Use the distributive property to find the product of each expression.

21.  $5(6 + 4)$

23.  $6(b + 9)$

25.  $4(c + 15 + 5a)$

22.  $7(3 + 4)$

24.  $21(5 + 3x)$

26.  $17(8 + d + 6p)$

Find the greatest common divisor.

27.  $12c + 24$

29.  $9xc + 18x$

31.  $12z + 20h$

28.  $15 + 25y$

30.  $6j + 18k$

32.  $13y + 21t$

Factor each expression.

**33.**  $3y + 21$

**37.**  $24s + 28m$

**34.**  $25x + 35$

**38.**  $12q + 18n$

**35.**  $10c + 5$

**39.**  $7z + 14b$

**36.**  $6u + 4$

**40.**  $6j + 15k$

Find the LCM.

**41.** LCM (5, 30)

**44.** LCM (15, 50)

**42.** LCM (16, 24)

**45.** LCM (64, 16)

**43.** LCM (9, 30)

**46.** LCM (12, 20)

Use a calculator and find the value of each expression.

**47.**  $6 \cdot 8^3$

**49.**  $8 \cdot 13 \cdot 23^3$

**48.**  $3^3 \cdot 4^6$

**50.**  $5^2 \cdot 3^4 \cdot 2^5$

Write in scientific notation.

**51.** 35,210,000,000

**54.** 0.000000089

**52.** 4,500,000

**55.** 49.7

**53.** 0.0000375

## Chapter 4 Supplementary Problems

Express each improper fraction as a mixed number and express each mixed number as an improper fraction.

1.  $2\frac{2}{3}$

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

3.  $\frac{32}{5}$

4.  $1\frac{7}{8}$

5.  $\frac{15}{7}$

6.  $6\frac{5}{9}$

7.  $3\frac{3}{4}$

8.  $\frac{21}{4}$

Write two equivalent fractions for each fraction.

9.  $\frac{7}{8}$

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

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

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

13.  $\frac{9}{15}$

14.  $\frac{11}{12}$

15.  $\frac{1}{50}$

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

Express each fraction in simplest form.

17.  $\frac{10}{25}$

18.  $\frac{4}{30}$

19.  $\frac{6}{42}$

20.  $\frac{15}{45}$

21.  $\frac{3}{27}$

22.  $\frac{18}{24}$

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

24.  $\frac{21}{30}$

Order from least to greatest.

25.  $\frac{1}{2}$ ,  $\frac{1}{5}$ ,  $\frac{3}{10}$

27.  $\frac{2}{9}$ ,  $\frac{5}{6}$ ,  $\frac{5}{18}$

26.  $\frac{5}{12}$ ,  $\frac{2}{3}$ ,  $\frac{1}{4}$

28.  $\frac{19}{21}$ ,  $\frac{3}{7}$ ,  $\frac{2}{3}$

Add, subtract, multiply, or divide. Simplify your answer if possible.

29.  $\frac{3}{10} + \frac{4}{5}$

40.  $5\frac{1}{2} - 3\frac{3}{16}$

30.  $\frac{2}{3} - \frac{1}{2}$

41.  $\frac{4}{7} \div \frac{1}{2}$

31.  $4\frac{1}{2} \cdot 3\frac{3}{4}y$

42.  $3\frac{1}{8} + 2\frac{15}{16}$

32.  $1\frac{3}{24} - \frac{11}{12}$

43.  $3\frac{3}{5} \div 2\frac{1}{4}$

33.  $\frac{5}{6} \div \frac{7}{8}$

44.  $1\frac{7}{12} \div 1\frac{1}{3}$

34.  $3\frac{3}{16} + 5\frac{3}{4}$

45.  $6\frac{5}{12}m \cdot 1\frac{1}{3}$

35.  $\frac{4}{7} \cdot \frac{4}{7}$

46.  $5\frac{1}{3}n + 5\frac{5}{6}n$

36.  $2\frac{5}{8} - 1\frac{3}{24}$

47.  $2\frac{1}{4} \cdot 6\frac{2}{3}$

37.  $9\frac{1}{3}g + 6\frac{2}{5}g$

48.  $3\frac{6}{7} \div 4\frac{1}{2}$

38.  $2\frac{6}{7} \cdot 2\frac{4}{5}$

49.  $1\frac{8}{9} \cdot 3\frac{3}{5}$

39.  $4\frac{7}{8} \div \frac{5}{8}$

50.  $4\frac{1}{4} - 2\frac{15}{16}$



## Chapter 5 Supplementary Problems

Simplify each expression by following the order of operations.

1.  $6 + 3 \cdot 8$

4.  $12(10 - 9) + 3 \cdot 5$

7.  $11 + 3(10 - 7)$

2.  $12 \div 3 \cdot (3 + 4)$

5.  $6 \cdot 7 \div 3 + 4$

8.  $5 + 4 - 3 \cdot 6 \div 2$

3.  $28 - 20 \div 5$

6.  $(5 + 7) \div 4 + 3 \cdot 2$

Evaluate each expression from  $n = 6$ .

9.  $n + 6$

12.  $8n + 5$

15.  $6n - 30$

18.  $5n - 3n$

10.  $n - 3$

13.  $\frac{n}{11} + 21$

16.  $1 + \frac{1}{n}$

11.  $50 - 3n$

14.  $\frac{n}{3} - 2$

17.  $\frac{2n}{3} + \frac{3}{2n}$

Tell whether each equation is *true* or *false* when the given number is substituted for  $x$ .

19.  $5(7) - x = 30$  when  $x = 5$

23.  $15 + 4x = 23$  when  $x = 2$

20.  $x + 4(x) = 40$  when  $x = 10$

24.  $3x \cdot 4 = 16$  when  $x = 4$

21.  $26 + x = 20$  when  $x = 6$

25.  $6 + 8x = 62$  when  $x = 7$

22.  $30 - 3x = 9$  when  $x = 7$

Solve for  $x$ . Write your answer in simplest form.

26.  $x + 18 = 23$

30.  $3\frac{3}{4} - x = 2\frac{1}{8}$

27.  $32 - x = 18$

31.  $\frac{1}{2}x - \frac{1}{2} = 5$

28.  $\frac{2}{3}x + \frac{2}{3} = 5\frac{2}{3}$

32.  $\frac{7}{8} + \frac{3}{8}x = 6\frac{7}{8}$

29.  $\frac{6}{7} + 3x = 12\frac{6}{7}$

Simplify each complex fraction.

33.  $\frac{\frac{2}{3}}{\frac{1}{3}}$

35.  $\frac{\frac{3}{4}}{2}$

37.  $\frac{\frac{1}{4}}{\frac{1}{16}}$

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

34.  $\frac{\frac{4}{5}}{\frac{4}{7}}$

36.  $\frac{6}{\frac{7}{8}}$

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

40.  $\frac{\frac{15}{16}}{4}$

Simplify. Write your answers in simplest form.

41.  $\frac{2}{7b} + \frac{1}{7b}$

45.  $\frac{13}{16a} - \frac{1}{2a}$

42.  $\frac{19}{20x} - \frac{1}{4x}$

46.  $\frac{7}{8j} + \frac{3}{8j} + \frac{5}{8j}$

43.  $\frac{7}{24g} + \frac{3}{8g}$

47.  $\frac{8}{9y} - \frac{1}{9y} + \frac{2}{9y}$

44.  $\frac{9}{10t} - \frac{3}{4t}$

48.  $\frac{3}{4c} - \frac{2}{3c} + \frac{1}{6c}$

Multiply. Write your answer in simplest form.

49.  $\frac{3}{5} \cdot \frac{5}{6z}$

53.  $\frac{2}{7h} \cdot \frac{21}{24}$

50.  $\frac{3}{8e} \cdot \frac{8}{15}$

54.  $\frac{3}{5m} \cdot \frac{8}{9}$

51.  $\frac{24}{25} \cdot \frac{5p}{8}$

55.  $\frac{5}{12} \cdot \frac{7}{15f}$

52.  $\frac{15}{16k} \cdot \frac{8}{9}$