Instructor's Solutions Manual

BASIC COLLEGE MATHEMATICS SIXTH EDITION

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Chapter 1

Section 1.2 Practice Exercises

- **1.** The place value of the 8 in 38,760,005 is millions.
- **2.** The place value of the 8 in 67,890 is hundreds.
- **3.** The place value of the 8 in 481,922 is tenthousands.
- **4.** 67 is written as sixty-seven.
- **5.** 395 is written as three hundred ninety-five.
- **6.** 12,804 is written as twelve thousand, eight hundred four.
- 321,670,200 is written as three hundred twentyone million, six hundred seventy thousand, two hundred.
- **8.** Twenty-nine in standard form is 29.
- **9.** Seven hundred ten in standard form is 710.
- **10.** Twenty-six thousand, seventy-one in standard form is 26.071.
- **11.** Six million, five hundred seven in standard form is 6,000,507.
- **12.** 1,047,608 = 1,000,000 + 40,000 + 7000 + 600 + 8
- 13. a. Find "France" in the left column. Then read from left to right until the "Literature" column is reached. We find that 11 Literature Nobel Prize winners were born in France.
 - **b.** Look at the "Total" column. Three countries have more than 60 Nobel Prize winners. The United States has 259, the United Kingdom has 99, and Germany has 77.

Vocabulary, Readiness & Vocabulary Check 1.2

- **1.** The numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, ... are called <u>whole</u> numbers.
- 2. The number 1,286 is written in standard form.
- 3. The number "twenty-one" is written in words.

- **4.** The number 900 + 60 + 5 is written in <u>expanded</u> form.
- **5.** In a whole number, each group of 3 digits is called a <u>period</u>.
- **6.** The <u>place value</u> of the digit 4 in the whole number 264 is ones.
- 7. hundreds
- **8.** To read (or write) a number, read from <u>left</u> to <u>right</u>.
- 9. 80,000
- 10. Boott Spur

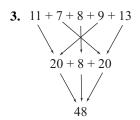
Exercise Set 1.2

- **2.** The place value of the 5 in 905 is ones.
- **4.** The place value of the 5 in 6527 is hundreds.
- **6.** The place value of the 5 in 79,050,000 is tenthousands.
- **8.** The place value of the 5 in 51,682,700 is tenmillions.
- 10. 316 is written as three hundred sixteen.
- **12.** 5445 is written as five thousand, four hundred forty-five.
- **14.** 42,009 is written as forty-two thousand, nine.
- **16.** 3,204,000 is written as three million, two hundred four thousand.
- **18.** 47,033,107 is written as forty-seven million, thirty-three thousand, one hundred seven.
- **20.** 22,806 is written as twenty-two thousand, eight hundred six.
- **22.** 118,049 is written as one hundred eighteen thousand, forty-nine.
- **24.** 347,219 is written as three hundred forty-seven thousand, two hundred nineteen.
- **26.** 11,239 is written as eleven thousand, two hundred thirty-nine.
- **28.** 202,700 is written as two hundred two thousand, seven hundred.

- **30.** Four thousand, four hundred sixty-eight in standard form is 4468.
- **32.** Seventy-three thousand, two in standard form is 73.002.
- **34.** Sixteen million, four hundred five thousand, sixteen in standard form is 16.405.016.
- **36.** Two million, twelve in standard form is 2.000,012.
- **38.** Six hundred forty thousand, eight hundred eighty-one in standard form is 640,881.
- **40.** Two hundred thirty-four thousand in standard form is 234,000.
- **42.** Two thousand eighty in standard form is 2080.
- **44.** Ninety-one million, seventy-one thousand dollars in standard form is \$91,071,000.
- **46.** Two thousand, five hundred forty-four in standard form is 2544.
- **48.** 789 = 700 + 80 + 9
- **50.** 6040 = 6000 + 40
- **52.** 20,215 = 20,000 + 200 + 10 + 5
- **54.** 99,032 = 90,000 + 9000 + 30 + 2
- **56.** 47,703,029 = 40,000,000 + 7,000,000 + 700,000 + 3000 + 20 + 9
- **58.** The elevation of Mt. Washington in standard form is 6288. 6288 is written as six thousand, two hundred eighty-eight.
- **60.** 5712 = 5000 + 700 + 10 + 2
- **62.** The second tallest mountain in New England is Mt. Adams.
- **64.** The British Museum in London had more visitors than the Shanghai Science and Technology Museum in Shanghai.
- **66.** The number of visitors to the Louvre was 8,700,000 which is written as eight million, seven hundred thousand.
- **68.** Three of the museums listed were visited by fewer than 6,000,000 people.

- **70.** The largest number is 77,753.
- **72.** Yes
- **74.** answers may vary
- **76.** 5 trillion in the American system is written as 5,000,000,000,000 in standard form.

Section 1.3 Practice Exercises



- 4. 19
 5042
 638
 + 526
 6225
- 5. 2 cm + 8 cm + 15 cm + 5 cm = 30 cmThe perimeter is 30 centimeters.
- **6.** 647 + 647 + 647 = 1941The perimeter is 1941 feet.
- 7. $70 + 50 \over 120$

Georgia produces 120 million pounds of freestone peaches.

- **8. a.** The country with the fewest threatened mammal species corresponds to the shortest bar, which is Malaysia.
 - **b.** To find the total number of threatened mammal species for Brazil, India, and Mexico, we add.

$$\begin{array}{r}
 82 \\
 92 \\
 + 95 \\
 \hline
 269
 \end{array}$$

The total number of threatened mammal species for Brazil, India, and Mexico is 269.

Calculator Explorations

3.
$$285 + 55 = 340$$

Vocabulary, Readiness & Video Check 1.3

- **1.** The sum of 0 and any number is the same number.
- **2.** The sum of any number and 0 is the same number.
- 3. In 35 + 20 = 55, the number 55 is called the <u>sum</u> and 35 and 20 are each called an <u>addend</u>.
- **4.** The distance around a polygon is called its <u>perimeter</u>.
- 5. Since (3 + 1) + 20 = 3 + (1 + 20), we say that changing the grouping in addition does not change the sum. This property is called the <u>associative</u> property of addition.
- 6. Since 7 + 10 = 10 + 7, we say that changing the <u>order</u> in addition does not change the sum. This property is called the <u>commutative</u> property of addition.
- 7. To add whole numbers, we line up <u>place</u> values and add from <u>left</u> to <u>right</u>.

- 8. triangle; 3
- 9. increased by

Exercise Set 1.3

2.
$$\frac{27}{+31}$$

4.
$$37 + 542 \over 579$$

12.
$$\begin{array}{r} 1\\35\\ +470\\ \hline 505 \end{array}$$

14.
$$17,427$$
 $+821,059$
 $\overline{838,486}$

18.
$$\begin{array}{r} 2 \\ 12 \\ 4 \\ 8 \\ 26 \\ +10 \\ \hline 60 \end{array}$$

Chapter 1: The Whole Numbers

22.
$$\begin{array}{c} 2\\ 23\\ 49\\ +18\\ \hline 90 \end{array}$$

40.

$$\begin{array}{r}
111212\\504,218\\321,920\\38,507\\+594,687\\\hline
1,459,332
\end{array}$$

The perimeter is 16 kilometers.

The perimeter is 12 centimeters.

The perimeter is 24 miles.

The perimeter is 92 centimeters.

50.
$$6+5+7+3+4+7+5=37$$
 The perimeter is 37 inches.

52. The unknown vertical side has length
$$3 + 5 = 8$$
 feet. The unknown horizontal side has length $8 + 4 = 12$ feet. $8 + 3 + 4 + 5 + 12 + 8 = 40$ The perimeter is 40 feet.

54. "Find the sum" indicates addition.

$$\begin{array}{r}
 1 \\
 802 \\
 + 6487 \\
 \hline
 7289
 \end{array}$$

The sum of 802 and 6487 is 7289.

56. "Find the total" indicates addition.

$$\begin{array}{r}
 12 \\
 89 \\
 45 \\
 2 \\
 19 \\
 + 341 \\
 \hline
 496
 \end{array}$$

The total of 89, 45, 2, 19, and 341 is 496.

58. "Increased by" indicates addition.

$$712 + 38 \over 750$$

712 increased by 38 is 750.

60. "Plus" indicates addition.

$$\begin{array}{r}
 121 \\
 3565 \\
 565 \\
 + 70 \\
 \hline
 4200
 \end{array}$$

3565 plus 565 plus 70 is 4200.

62. Add 4850 to 39,250.

$$\begin{array}{r}
11 \ 1 \\
39,250 \\
+ \ 4850 \\
\hline
44,100
\end{array}$$

California's projected population in 2030 is 44,100 thousand.

64.
$$285 + 98 \over 383$$

The distance from Kansas City to Colby is 383 miles.

The perimeter of the home is 210 feet.

The fluid intake of the patient was 1895 cc.

70. Add 992 to 1305.

Hank Aaron batted in 2297 total runs during his career in professional baseball.

72. Find the sum of 22,867,835 and 4,573,567.

$$\begin{array}{r}
1 \ 111111 \\
22,867,835 \\
+ \ 4,573,567 \\
\hline
27,441,402
\end{array}$$

The sheep population was 27,441,402.

74.
$$\begin{array}{r}
21 \\
257 \\
182 \\
257 \\
+182 \\
\hline
878
\end{array}$$

The perimeter of the puzzle is 878 millimeters.

Allyson Felix was born in the year 1985.

78. Of the states listed, Indiana had the fewest CVS pharmacies.

The total number of CVS pharmacies in the ten states listed in the table was 4768.

82. The total number of pharmacies listed in the table is 4768.

$$\begin{array}{r}
 11 \\
 4768 \\
 + 3048 \\
 \hline
 7816
 \end{array}$$

There were 7816 CVS pharmacies in the 50 states.

84. 5260
$$+ 1225 \over 6485$$

The total highway mileage in Rhode Island is 6485 miles.

- **86.** answers may vary
- 88. answers may vary

90.

$$\begin{array}{r}
112221\\
78,962\\
129,968,350\\
+36,462,880\\
\hline
166,510,192
\end{array}$$

The given answer is correct.

The given answer is incorrect.

Section 1.4 Practice Exercises

- 1. a. 14 6 = 8 because 8 + 6 = 14.
 - **b.** 20 8 = 12 because 12 + 8 = 20
 - **c.** 93 93 = 0 because 0 + 93 = 93.
 - **d.** 42 0 = 42 because 42 + 0 = 42.

3. a.
$$6\%$$
 7 Check: 648 $\frac{-49}{648}$ $\frac{+49}{697}$

4. a.
$$\cancel{\cancel{4}}\cancel{\cancel{9}}\cancel{\cancel{9}}$$
 Check: 236 $\frac{-1\ 6\ 4}{2\ 3\ 6}$ $\frac{+164}{400}$

b.
$$10 \% \%$$
 Check: 238 $\frac{-762}{238}$ $\frac{+762}{1000}$

5.
$$15,759$$

$$- 458$$

$$15,301$$

The radius of Neptune is 15,301 miles.

6. 92
$$\frac{-47}{45}$$

The sale price of the suit is \$45.

Calculator Explorations

1.
$$865 - 95 = 770$$

2.
$$76 - 27 = 49$$

3.
$$147 - 38 = 109$$

4.
$$366 - 87 = 279$$

5.
$$9625 - 647 = 8978$$

6.
$$10,711 - 8925 = 1786$$

Vocabulary, Readiness & Video Check 1.4

- **1.** The difference of any number and that same number is 0.
- **2.** The difference of any number and 0 is the same number.
- 3. In 37 19 = 18, the number 37 is the <u>minuend</u>, and the number 19 is the <u>subtrahend</u>.

- 4. In 37 19 = 18, the number 18 is called the <u>difference</u>.
- **5.** 6 6 = 0
- **6.** 93 93 = 0
- 7. 600 0 = 600
- 8. 5 0 = 5
- **9.** We cannot take 7 from 2 in the ones place, so we borrow one ten from the tens place and move it over to the ones place to give us 10 + 2 or 12.
- **10.** Order does not matter when <u>adding</u>, but order does matter when <u>subtracting</u>.

Exercise Set 1.4

- 2. 72 - 41 31 Check: 31
 - $\begin{array}{r} 31 \\ +41 \\ \hline 72 \end{array}$
- 4. 572 - 321 - 251
 - Check: $251 + 321 \over 572$
- 6. 286 - 45 - 241 Check:
 - $\begin{array}{r}
 241 \\
 + 45 \\
 \hline
 286
 \end{array}$
- 8. 5766 - 324 5442 Check: 5442 + 324 5766

- 10. 4912 -2610 2302Check: 2302 +2610
- 12. 257 -257 0
 - Check: $0 + 257 \over 257$

4912

- 14. 55 - 29
 - 26 Check: 1 26
- $\frac{+29}{55}$ **16.** 80
- $\frac{-37}{43}$ Check:
- 18. 436 -275 161
 - Check:

 1
 161
 + 275

 436
- 20. 674 -299 $\overline{375}$
 - Check:

 11

 375

 + 299

 674

22.
$$300$$
 -149
 151
Check:
 11
 151
 $+149$
 300

32.
$$300$$

$$-211$$

$$89$$
Check:
$$11$$

$$89$$

$$+211$$

$$300$$

44.
$$21$$
 $\frac{-9}{12}$
21 subtract 9 is 12.

46. 16
$$\frac{-5}{11}$$
The difference of 16 and 5 is 11.

48.
$$59$$
 -41
 18

59 subtract 41 is 18.

50. 25
$$\frac{-12}{13}$$

25 less 12 is 13.

52.
$$90$$
 -86
 4

86 subtracted from 90 is 4.

They traveled 3828 miles on their trip.

56. 197
$$\frac{-98}{99}$$

Kelp can grow 99 feet taller than bamboo.

The total U.S. land area drained by the Ohio and Tennessee sub-basins is 204,000 square miles.

The Upper Mississippi sub-basin drains 114,000 square miles more than the Lower Mississippi sub-basin.

62.
$$68$$

$$\frac{-58}{10}$$

The low temperature was 10° Fahrenheit.

64.
$$845$$

$$-649$$

$$196$$

She will have \$196 left in her savings account.

Pat's blood cholesterol level should be decreased by 58.

The sale price of the stereo is \$448.

70.
$$38,708$$

$$\frac{-6208}{32,500}$$

There were 32,500 official participants for the 2017 Boston Marathon.

72. The shortest bar corresponds to the quietest reading. Leaves rustling is the quietest.

74.
$$100$$

$$\frac{-70}{30}$$

The difference in sound intensity between live rock music and loud television is 30 dB.

The population of Springfield was 33,582 greater than the population of Champaign.

The increase in the number of California condors is 249.

80. New York JFK International and Denver International airports have 60 million or fewer passengers per year.

82.
$$104$$
 $\frac{-81}{23}$

Hartsfield-Jackson Atlanta International Airport has 23 million more passengers per year than the Los Angeles International Airport.

84. Student A Budget

$$\begin{array}{r}
 600 \\
 200 \\
 150 \\
 + 120 \\
\hline
 1070
\end{array}$$

$$\frac{1200}{-1070}$$

$$\frac{130}{130}$$

Student A would have an excess of \$130.

Student B Budget

11 300 400

 $240 + 170 \over 1110$

 $\frac{1200}{-1110}$

Student B would have an excess of \$90.

86. 986

 $\frac{-48}{938}$

2 2

88. 80 93

17

 $\frac{9}{201}$

90. 10,000

 $\frac{-1786}{8214}$

92. 12,468

3 211 + 1 988

17,667

94. In 2863, 2863 is the minuend and 1904 is the -1904

subtrahend.

96. In find 86 decreased by 25, 86 is the minuend

98. 478

- 89

389

The given answer is correct.

and 25 is the subtrahend.

Check:

1

389 + 89

478

100. 7615

- 547

7068

The given answer is incorrect.

Check:

7068

 $\frac{+547}{7615}$

102. 10, <u>244</u> - 8 534

 $\frac{-8534}{1710}$

104. answers may vary

Section 1.5 Practice Exercises

- **1. a.** To round 57 to the nearest ten, observe that the digit in the ones place is 7. Since the digit is at least 5, we add 1 to the digit in the tens place. The number 57 rounded to the nearest ten is 60.
 - b. To round 641 to the nearest ten, observe that the digit in the ones place is 1. Since the digit is less than 5, we do not add 1 to the digit in the tens place. The number 641 rounded to the nearest ten is 640.
 - c. To round 325 to the nearest ten observe that the digit in the ones place is 5. Since the digit is at least 5, we add 1 to the digit in the tens place. The number 325 rounded to the nearest ten is 330.
- 2. a. To round 72,304 to the nearest thousand, observe that the digit in the hundreds place is 3. Since the digit is less than 5, we do not add 1 to the digit in the thousands place. The number 72,304 rounded to the nearest thousand is 72,000.
 - **b.** To round 9222 to the nearest thousand, observe that the digit in the hundreds place is 2. Since the digit is less than 5, we do not add 1 to the digit in the thousands place. The number 9222 rounded to the nearest thousand is 9000.
 - c. To round 671,800 to the nearest thousand, observe that the digit in the hundreds place is 8. Since this digit is at least 5, we add 1 to the digit in the thousands place. The number 671,800 rounded to the nearest thousand is 672,000.
- **3. a.** To round 3474 to the nearest hundred, observe that the digit in the tens place is 7. Since this digit is at least 5, we add 1 to the digit in the hundreds place. The number 3474 rounded to the nearest hundred is 3500.

- **b.** To round 76,243 to the nearest hundred, observe that the digit in the tens place is 4. Since this digit is less than 5, we do not add 1 to the digit in the hundreds place. The number 76,243 rounded to the nearest hundred is 76,200.
- c. To round 978,965 to the nearest hundred, observe that the digit in the tens place is 6. Since this digit is at least 5, we add 1 to the digit in the hundreds place. The number 978,865 rounded to the nearest hundred is 979,000.
- **4.** 49 50 rounds to 25 rounds to 30 32 30 rounds to 51 50 rounds to 98 rounds to +100260
- 5. 3785 rounds to $\frac{4000}{2000}$ rounds to $\frac{2000}{2000}$
- 6. 11 rounds to 10 16 rounds to 20 19 rounds to 20 +31 rounds to +3080

The total distance is approximately 80 miles.

7. 2930 rounds to 3 000
18,166 rounds to 18 000

$$+$$
 189 rounds to $+$ 0
 $-$ 21.000

The total number of reported cases of these preventable diseases was 21,000 in 2015.

Vocabulary, Readiness & Video Check 1.5

- 1. To graph a number on a number line, darken the point representing the location of the number.
- **2.** Another word for approximating a whole number is <u>rounding</u>.
- 3. The number 65 rounded to the nearest ten is <u>70</u> but the number 61 rounded to the nearest ten is <u>60</u>.
- **4.** An <u>exact</u> number of products is 1265, but an <u>estimate</u> is 1000.

- 5. 3 is in the place we're rounding to (tens), and the digit to the right of this place is 5 or greater, so we need to add 1 to the 3.
- **6.** On a number line, 22 is closer to 20 than 30. Thus, 22 rounded to the nearest ten is 20.
- 7. Each circled digit is to the right of the place value being rounded to and is used to determine whether or not we add 1 to the digit in the place value being rounded to.

Exercise Set 1.5

- 2. To round 273 to the nearest ten, observe that the digit in the ones place is 3. Since this digit is less than 5, we do not add 1 to the digit in the tens place. The number 273 rounded to the nearest ten is 270.
- **4.** To round 846 to the nearest ten, observe that the digit in the ones place is 6. Since this digit is at least 5, we add 1 to the digit in the tens place. The number 846 rounded to the nearest ten is 850.
- **6.** To round 8494 to the nearest hundred, observe that the digit in the tens place is 9. Since this digit is at least 5, we add 1 to the digit in the hundreds place. The number 8494 rounded to the nearest hundred is 8500.
- 8. To round 898 to the nearest ten, observe that the digit in the ones place is 8. Since this digit is at least 5, we add 1 to the digit in the tens place. The number 898 rounded to the nearest ten is 900.
- **10.** To round 82,198 to the nearest thousand, observe that the digit in the hundreds place is 1. Since this digit is less than 5, we do not add 1 to the digit in the thousands place. The number 82,198 rounded to the nearest thousand is 82,000.
- 12. To round 42,682 to the nearest ten-thousand, observe that the digit in the thousands place is 2. Since this digit is less than 5, we do not add 1 to the digit in the ten-thousands place. The number 42,682 rounded to the nearest ten-thousand is 40,000.
- **14.** To round 179,406 to the nearest hundred, observe that the digit in the tens place is 0. Since this digit is less than 5, we do not add 1 to the digit in the hundreds place. The number 179,406 rounded to the nearest hundred is 179,400.

- **16.** To round 96,501 to the nearest thousand, observe that the digit in the hundreds place is 5. Since this digit is at least 5, we add 1 to the digit in the thousands place. The number 96,501 rounded to the nearest thousand is 97,000.
- **18.** To round 99,995 to the nearest ten, observe that the digit in the ones place is 5. Since this digit is at least 5, we add 1 to the digit in the tens place. The number 99,995 rounded to the nearest ten is 100,000.
- **20.** To round 39,523,698 to the nearest million, observe that the digit in the hundred-thousands place is 5. Since this digit is at least 5, we add 1 to the digit in the millions place. The number 39,523,698 rounded to the nearest million is 40,000,000.
- **22.** Estimate 7619 to a given place value by rounding it to that place value. 7619 rounded to the tens place is 7620, to the hundreds place is 7600, and to the thousands place is 8000.
- **24.** Estimate 7777 to a given place value by rounding it to that place value. 7777 rounded to the tens place is 7780, to the hundreds place is 7800, and to the thousands place is 8000.
- **26.** Estimate 85,049 to a given place value by rounding it to that place value. 85,049 rounded to the tens place is 85,050, to the hundreds place is 85,000, and to the thousands place is 85,000.
- **28.** To round 15,667 to the nearest thousand, observe that the digit in the hundreds place is 6. Since this digit is at least 5, we add 1 to the digit in the thousands place. Therefore, 15,667 restaurants rounded to the nearest thousand is 16,000 restaurants.
- **30.** To round 60,149 to the nearest hundred, observe that the digit in the tens place is 4. Since this digit is less than 5, we do not add 1 to the digit in the hundreds place. Therefore, 60,149 days rounded to the nearest hundred is 60,100 days.
- **32.** To round 324,758,293 to the nearest million, observe that the digit in the hundred-thousands place is 7. Since this digit is at least 5, we add 1 to the digit in the millions place. Therefore, 324,758,293 rounded to the nearest million is 325,000,000.

- **34.** To round 2,110,000 to the nearest million, observe that the digit in the hundred-thousands place is 1. Since this digit is less than 5, we do not add 1 to the digit in the millions place. Therefore, \$2,110,000 rounded to the nearest million is \$2,000,000.
- **36.** To round 15,226,000,000 to the nearest tenmillion, observe that the digit in the millions place is 6. Since this digit is at least 5, we add 1 to the digit in the ten-millions place. Therefore, 15,226,000,000 bushels rounded to the nearest ten-million is 15,230,000,000 bushels.

38. 52 rounds to 50
33 rounds to 30
15 rounds to 20

$$+29$$
 rounds to $+30$
 130

40. 555 rounds to 560
$$\frac{-235}{320}$$
 rounds to $\frac{-240}{320}$

42.
$$4050$$
 rounds to 4100
 3133 rounds to 3100
 $+1220$ rounds to $+1200$
 -8400

44. 1989 rounds to 2000
$$\frac{-1870}{100}$$
 rounds to $\frac{-1900}{100}$

46. 799 rounds to 800
1655 rounds to 1700

$$+271$$
 rounds to $+300$
 2800

- **48.** 522 + 785 is approximately 520 + 790 = 1310. The answer of 1307 is correct.
- **50.** 542 + 789 + 198 is approximately 540 + 790 + 200 = 1530. The answer of 2139 is incorrect.
- **52.** 5233 + 4988 is approximately 5200 + 5000 = 10,200. The answer of 9011 is incorrect.

54.	89	rounds to	90
	97	rounds to	100
	100	rounds to	100
	79	rounds to	80
	75	rounds to	80
	+ 82	rounds to	+ 80
			530

The total score is approximately 530.

56.	588	rounds to	600
	689	rounds to	700
	277	rounds to	300
	143	rounds to	100
	59	rounds to	100
	+ 802	rounds to	+ 800
			2600

The total distance is approximately 2600 miles.

58. 1895 rounds to 1900
$$\frac{-1524}{400}$$
 rounds to $\frac{-1500}{400}$

The difference in price is approximately \$400.

60. 64 rounds to 60
41 rounds to 40

$$+133$$
 rounds to $+130$
 230

The total distance is approximately 230 miles.

62. 51,746 rounds to 52,000
$$\frac{-49,713}{2000}$$
 rounds to $\frac{-50,000}{2000}$

The increase was approximately 2000 credit hours.

- **64.** \$3370 million written in standard form is \$3,370,000,000. \$3,370,000,000 rounded to the nearest hundred-million is \$3,400,000,000. \$3,370,000,000 rounded to the nearest billion is \$3,000,000,000.
- **66.** \$4670 million written in standard form is \$4,670,000,000. \$4,670,000,000 rounded to the nearest hundred-million is \$4,700,000,000. \$4,670,000,000 rounded to the nearest billion is \$5,000,000,000.
- **68.** 5698, for example, rounded to the nearest ten is 5700.

- **70.** In 950, the digit in the tens place is 5, which is greater than 5, so to round 950 to the nearest hundred, we add 1 to the digit in the hundreds place. 950 rounded to the nearest hundred is 1000.
- **72.** In 48, the digit in the tens place is 4, which is less than 5, so to round 48 to the nearest hundred, we do not add 1 to the digit in the hundreds place. 48 rounded to the nearest hundred is 0.
- **74.** The largest possible number that rounds to 8600 is 8649.
- **76.** answers may vary

78. 5950 rounds to 6 000
7693 rounds to 7 700

$$+ 8203$$
 rounds to $+ 8 200$
 $21,900$

The perimeter is approximately 21,900 miles.

Section 1.6 Practice Exercises

- 1. a. $3 \times 0 = 0$
 - **b.** 4(1) = 4
 - **c.** (0)(34) = 0
 - **d.** $1 \cdot 76 = 76$
- **2. a.** $5(2+3) = 5 \cdot 2 + 5 \cdot 3$
 - **b.** $9(8+7) = 9 \cdot 8 + 9 \cdot 7$
 - **c.** $3(6+1) = 3 \cdot 6 = 3 \cdot 1$
- 3. a. $\begin{array}{c} 2 \\ 36 \\ \times 4 \\ \hline 144 \end{array}$
 - **b.** $132 \times 9 \over 1188$
- 4. a. 594 × 72 1 188 41 580 42,768

b.
$$306 \times 81 \over 306 \\ 24 480 \\ \hline 24,786$$

5. a.
$$726$$

$$\times 142$$

$$\hline
1 452$$

$$29 040$$

$$\underline{72 600}$$

$$\overline{103,092}$$

b.
$$288 \times 4 \over 1152$$

6.
$$75 \cdot 100 = 7500$$

7.
$$808 \cdot 1000 = 808,000$$

8.
$$35$$

 $\times 3$
 $\overline{105}$
 $35 \cdot 3000 = 105,000$
Attach 3 zeros.

9.
$$600 \cdot 600 = 360,000$$

10. Area = length · width
=
$$(360 \text{ miles})(280 \text{ miles})$$

= $100,800 \text{ square miles}$

The area of Wyoming is 100,800 square miles.

The printer can print 720 pages in 45 minutes.

The total cost is \$133.

13. 163 rounds to 200

$$\times 391$$
 rounds to $\times 400$
 80.000

There are approximately 80,000 words on 391 pages.

Calculator Explorations

1.
$$72 \times 48 = 3456$$

2.
$$81 \times 92 = 7452$$

3.
$$163 \cdot 94 = 15{,}322$$

4.
$$285 \cdot 144 = 41,040$$

6.
$$1562(843) = 1,316,766$$

Vocabulary, Readiness & Video Check 1.6

1. The product of 0 and any number is $\underline{0}$.

2. The product of 1 and any number is the <u>number</u>.

3. In $8 \cdot 12 = 96$, the 96 is called the <u>product</u> and 8 and 12 are each called a <u>factor</u>.

4. Since $9 \cdot 10 = 10 \cdot 9$, we say that changing the <u>order</u> in multiplication does not change the product. This property is called the <u>commutative</u> property of multiplication.

5. Since $(3 \cdot 4) \cdot 6 = 3 \cdot (4 \cdot 6)$, we say that changing the <u>grouping</u> in multiplication does not change the product. This property is called the associative property of multiplication.

6. Area measures the amount of surface of a region.

7. Area of a rectangle = length \cdot width.

8. We know $9(10 + 8) = 9 \cdot 10 + 9 \cdot 8$ by the <u>distributive</u> property.

9. distributive property

10. To show that 8649 is actually multiplied by 70 and not by just 7.

11. Think of 50 times 9 and then attach the two zeros from 900, or think of 5 times 9 and then attach the three zeros at the end of 50 and 900. Both approaches give us 45,000.

12. Area is measured in square units, and here we have meters times meters, or square meters; the answer is 63 *square* meters.

13. Multiplication is also an application of addition since it is addition of the same addend.

Exercise Set 1.6

2.
$$55 \cdot 1 = 55$$

4.
$$27 \cdot 0 = 0$$

6.
$$7 \cdot 6 \cdot 0 = 0$$

8.
$$1 \cdot 41 = 41$$

10.
$$5(8+2) = 5 \cdot 8 + 5 \cdot 2$$

12.
$$6(1+4) = 6 \cdot 1 + 6 \cdot 4$$

14.
$$12(12 + 3) = 12 \cdot 12 + 12 \cdot 3$$

16. 79
$$\times 3$$
 $\frac{237}{237}$

18.
$$638$$
 $\times 5$
 $\overline{3190}$

20.
$$882 \times 2 \over 1764$$

22.
$$9021$$
 $\times 3$
 $\overline{27,063}$

28.
$$708$$

$$\times 21$$

$$\overline{708}$$

$$\underline{14160}$$

$$14,868$$

30.
$$720$$
 $\times 80$
 $57,600$

32.
$$(593)(47)(0) = 0$$

34.
$$(240)(1)(20) = (240)(20) = 4800$$

38.
$$807$$

$$\times 127$$

$$\hline
5 649$$

$$16 140$$

$$80 700$$

$$\hline
102,489$$

44.
$$1876$$

$$\times 1407$$

$$\hline
13132$$

$$750400$$

$$\underline{1876000}$$

$$\underline{2,639,532}$$

46.
$$6 \times 100 = 600$$

48.
$$26 \times 1000 = 26,000$$

50.
$$9054 \cdot 10 = 90,540$$

52.
$$3 \cdot 9 = 27$$

 $3 \cdot 9000 = 27,000$
(attach 3 zeros)

- **54.** $7 \cdot 3 = 21$ $70 \cdot 300 = 21,000$ (attach 3 zeros)
- **56.** $27 \cdot 5 = 135$ $27 \cdot 50,000 = 1,350,000$ (attach 4 zeros)
- 58. Area = (length)(width)
 = (13 inches)(3 inches)
 = 39 square inches
 Perimeter = length + width + length + width
 - Perimeter = length + width + length + width = 13+3+13+3= 32 inches
- 60. Area = (length)(width)
 = (25 centimeters)(20 centimeters)
 = 500 square centimeters

 Perimeter = length + width + length + width
 = 25 + 20 + 25 + 20

= 90 centimeters

- 62. 982 rounds to 1000 $\times 650$ rounds to $\times 700$ $\times 700$,000
- 64. 111 rounds to 100 $\times 999$ rounds to $\times 1000$ 100,000
- **66.** 2872×12 is approximately 2872×10 , which is 28,720.

The best estimate is b.

68. 706×409 is approximately 700×400 , which is 280,000.

The best estimate is d.

70.
$$70 \times 12 = (7 \times 10) \times 12$$

= $7 \times (10 \times 12)$
= 7×120
= 840

- **72.** $9 \times 900 = 8100$
- **74.** $3310 \times 3 \over 9930$

76.
$$14$$
 $\times 8$ 112

There are 112 grams of fat in 8 ounces of hulled sunflower seeds.

There are 476 seats in the room.

- **80.** a. $5 \times 4 = 20$ There are 20 apartments on one floor.
 - b. 20 $\times 3$ $\overline{60}$ There are 60 apartments in the building.
- 82. Area = (length)(width) = (60 feet)(45 feet) = 2700 square feet The area is 2700 square feet.

84. Area = (length)(width) = (776 meters)(639 meters) = 495,864 square meters

The area is 495,864 square meters.

The 17 discs hold 11,900 MB.

- 88. 365

 × 3

 1095

 A cow eats 1095 pounds of grain each year.

There are 224 grams of fat in 16 ounces.

92.	Person	Number of persons	Cost per person	Cost per Category
	Student	24	\$5	\$120
	Nonstudent	4	\$7	\$28
	Children under 12	5	\$2	\$10
	Total Cost			\$158

94.
$$16 \times 3 = 48$$
 There were 48 million "older" Americans in 2016.

96. 126
$$\frac{-8}{118}$$

98.
$$47 + 26 + 10 + 231 + 50 = 364$$

The product of 19 and 4 is 76.

102. 19
$$\frac{+ 4}{23}$$

The total of 19 and 4 is 23.

104.
$$11 + 11 + 11 + 11 + 11 + 11 = 6 \cdot 11$$
 or $11 \cdot 6$

106. a.
$$4 \cdot 5 = 5 + 5 + 5 + 5$$
 or $4 + 4 + 4 + 4 + 4$

b. answers may vary

108. 31
$$\times 50$$
 1550

110.
$$57 \times 3 = 171$$

 $57 \times 6 = 342$
The problem is 57
 $\times 63$

112. answers may vary

114.
$$3 \times 402 = 1206$$

 $2 \times 403 = 806$
 $1206 + 806 + 363 = 2375$
Stephen Curry scored 2375 points during the 2015–2016 regular season.

Section 1.7 Practice Exercises

1. a.
$$9)72$$
 because $8 \cdot 9 = 72$.

b.
$$40 \div 5 = 8$$
 because $8 \cdot 5 = 40$.

c.
$$\frac{24}{6} = 4$$
 because $4 \cdot 6 = 24$.

2. a.
$$\frac{7}{7} = 1$$
 because $1 \cdot 7 = 7$.

b.
$$5 \div 1 = 5$$
 because $5 \cdot 1 = 5$.

c.
$$1)11$$
 because $11 \cdot 1 = 11$.

d.
$$4 \div 1 = 4$$
 because $4 \cdot 1 = 4$.

e.
$$\frac{10}{1} = 10$$
 because $10 \cdot 1 = 10$.

f.
$$21 \div 21 = 1$$
 because $1 \cdot 21 = 21$.

3. a.
$$\frac{0}{7} = 0$$
 because $0 \cdot 7 = 0$.

b.
$$8) 0$$
 because $0 \cdot 8 = 0$.

c. $5 \div 0$ is undefined because if $5 \div 0$ is a number, then the number times 0 would be

d.
$$0 \div 14 = 0$$
 because $0 \cdot 14 = 0$.

Check:
$$818$$

$$\frac{\times 6}{4908}$$

b.
$$4$$
 2212 -20 21 -20 12 -12 0

Check:
$$553$$

$$\frac{\times 4}{2212}$$

c.
$$\frac{251}{753}$$
 $\frac{-6}{15}$
 $\frac{-15}{03}$
 $\frac{-3}{0}$

Check:
$$251$$
 $\times 3$
 $\overline{753}$

5. a.
$$7 \overline{\smash{\big)}\, 2128}$$

$$\underline{-21}$$

$$02$$

$$\underline{-0}$$

$$28$$

$$\underline{-28}$$

$$0$$

Check: $304 \times 7 = 2128$

b.
$$9) \overline{) 45,900}$$

 $\underline{-45}$
 $0 9$
 $\underline{-9}$
 000

Check: $5100 \times 9 = 45,900$

Check: $234 \cdot 4 + 3 = 939$

b.
$$5) \frac{657}{3287} R 2$$

$$-30 \\
28 \\
-25 \\
37 \\
-35 \\
2$$

Check: $657 \cdot 5 + 2 = 3287$

7. a.
$$\begin{array}{r}
9067 \\
81,605 \\
-81 \\
06 \\
-0 \\
60 \\
-54 \\
65 \\
-63 \\
2
\end{array}$$

Check: $9067 \cdot 9 + 2 = 81,605$

Check: $5827 \cdot 4 + 2 = 23{,}310$

8.
$$17$$
) 8920 $\frac{-85}{42}$ R 12 $\frac{-34}{80}$ $\frac{-68}{12}$

10.
$$3) 171$$

$$\begin{array}{r} 171 \\ -15 \\ 21 \\ -21 \\ 0 \end{array}$$

Each student got 57 CDs.

11.
$$12) 532$$

$$-48$$

$$52$$

$$-48$$

$$4$$

There will be 44 full boxes and 4 printers left over.

12. Find the sum and divide by 7.

18
7) 126
<u>-7</u>
56
-56

The average time is 18 minutes.

Calculator Explorations

1.
$$848 \div 16 = 53$$

2.
$$564 \div 12 = 47$$

3.
$$5890 \div 95 = 62$$

4.
$$1053 \div 27 = 39$$

$$5. \quad \frac{32,886}{126} = 261$$

6.
$$\frac{143,088}{264} = 542$$

7.
$$0 \div 315 = 0$$

8. $315 \div 0$ is an error.

Vocabulary, Readiness & Video Check 1.7

- 1. In $90 \div 2 = 45$, the answer 45 is called the quotient, 90 is called the <u>dividend</u>, and 2 is called the <u>divisor</u>.
- **2.** The quotient of any number and 1 is the same number.
- **3.** The quotient of any number (except 0) and the same number is <u>1</u>.
- **4.** The quotient of 0 and any number (except 0) is 0.
- **5.** The quotient of any number and 0 is <u>undefined</u>.
- **6.** The <u>average</u> of a list of numbers is the sum of the numbers divided by the <u>number</u> of numbers.
- **7.** 0
- **8.** zero; this zero becomes a placeholder in the quotient

9.
$$202 \cdot 102 + 15 = 20,619$$

- **10.** This tells us we have a division problem since division is used to separate a quantity into equal parts.
- 11. addition and division

Exercise Set 1.7

2.
$$72 \div 9 = 8$$

4.
$$24 \div 3 = 8$$

6.
$$0 \div 4 = 0$$

8.
$$38 \div 1 = 38$$

10.
$$\frac{49}{49} = 1$$

12.
$$\frac{45}{9} = 5$$

14.
$$\frac{12}{0}$$
 is undefined

16.
$$6 \div 6 = 1$$

18.
$$7 \div 0$$
 is undefined

20.
$$18 \div 3 = 6$$

22.
$$5)$$
 85 -5 35 -35 0

Check:
$$17 \cdot 5 = 85$$

Check:
$$80 \cdot 8 = 640$$

Check:
$$526 \cdot 4 = 2104$$

28.
$$\frac{0}{30} = 0$$

Check:
$$0 \cdot 30 = 0$$

30.
$$8) 56$$
 -56 0

Check:
$$7 \cdot 8 = 56$$

32.
$$11$$
) 121
 -11
 11
 -11
 0

Check:
$$11 \cdot 11 = 121$$

Check:
$$60 \cdot 7 + 6 = 426$$

36. 3)
$$1240$$
 R 1 $\frac{-12}{04}$ $\frac{-3}{10}$ $\frac{-9}{1}$

Check:
$$413 \cdot 3 + 1 = 1240$$

Check:
$$55 \cdot 3 + 2 = 167$$

Check:
$$833 \cdot 4 + 1 = 3333$$

Check:
$$32 \cdot 23 = 736$$

Check: $48 \cdot 42 = 2016$

46.
$$44$$
) 1938 -176 178 -176 2

Check: $44 \cdot 44 + 2 = 1938$

48.
$$12$$
) 7354 -72 15 -12 34 -24 10

Check: $612 \cdot 12 + 10 = 7354$

Check: $405 \cdot 14 = 5670$

52.
$$64$$
) 2505 -192
 585
 -576
 9

Check: $39 \cdot 64 + 9 = 2505$

54.
$$123$$
) 5781 -492 861 -861 0

Check: $47 \cdot 123 = 5781$

Check: $96 \cdot 240 + 52 = 23{,}092$

Check: $201 \cdot 203 + 50 = 40,853$

Check: $303 \cdot 543 + 63 = 164,592$

62.
$$8) \frac{13}{104}$$

$$\frac{-8}{24}$$

$$\frac{-24}{0}$$

64. 5)
$$\frac{603}{3017}$$
 R 2
 $\frac{-30}{01}$
 $\frac{-0}{17}$
 $\frac{-15}{2}$

66.
$$50)$$
 85,747 $\frac{-50}{35}$ 7 $\frac{-350}{74}$ $\frac{-50}{247}$ $\frac{-200}{47}$

$$\begin{array}{r}
3\ 040 \\
68.\ 214 \overline{\smash)650,560} \\
\underline{-642} \\
8\ 5 \\
\underline{-0} \\
8\ 56 \\
\underline{-8\ 56} \\
00 \\
\underline{-0} \\
0
\end{array}$$

70.
$$7 \overline{\smash{\big)}\ 94}$$
 R 3 $-7 \overline{\smash{\big)}\ 24}$ $-21 \overline{\smash{\big)}\ 3}$

The quotient is 13 R 3.

72.
$$32)116$$
 R 20 $\frac{-96}{20}$

116 divided by 32 is 3 R 20.

74.
$$5$$
) 78 R 3 $\frac{-5}{28}$ R $\frac{-25}{3}$

The quotient is 15 R 3.

76.
$$85$$
) 4930
 -425
 680
 -680

There are 58 students in the group.

78.
$$21$$
) 5292000
 -42
 109
 -105
 42
 -42
 0

Each person received \$252,000.

The truck hauls 412 bushels on each trip.

There are 105 whole lane dividers.

84. 8)
$$\frac{23}{185}$$
 R 1
$$\frac{-16}{25}$$

$$\frac{-24}{1}$$

Yes, she has enough for a 22-student class. There is one 8-foot length and 1 additional foot of rope left over. That is, she has 9 feet of extra rope.

86. 6)
$$120$$
 $\frac{-12}{00}$

David Johnson made 20 touchdowns during 2016.

There are 16 whole feet in 1 rod.

90.
$$37$$
26
15
29
51
 $+22$
 180

Average = $\frac{180}{6} = 30$

Average =
$$\frac{845}{5}$$
 = 169

94.
$$\begin{array}{r} 2 \\ 92 \\ 96 \\ 90 \\ 85 \\ 92 \\ + 79 \\ \hline 534 \\ Average = \frac{534}{6} = 89 \\ \end{array}$$

96. 53 3) 123
40
$$\frac{-12}{123}$$
 03
 $\frac{-3}{123}$ 03

The average temperature is 41°.

102. 712
$$- 54$$

$$- 658$$

104.
$$\frac{0}{23} = 0$$
 because $0 \cdot 23 = 0$

106. 31)
$$304$$
 R 25 $\frac{-279}{25}$

108. The quotient of 200 and 20 is 200 ÷ 20, which is choice b.

110. 40 divided by 8 is $40 \div 8$, which is choice c.

Chapter 1: The Whole Numbers

ISM: Basic College Mathematics

112. 29 3)
$$\frac{26}{78}$$
 $\frac{-6}{18}$ $\frac{-18}{0}$

The average number of Nobel Prize winners for Sweden, Russia, and Japan is 26.

- **114.** The average will decrease; answers may vary.
- 116. No; answers may vary
 Possible answer: The average cannot be less than
 each of the four numbers.
- 118. $84 \div 21 = 4$ The width is 4 inches.
- **120.** answers may vary Possible answer: 2 and 2

122.
$$86$$
 46 $\frac{-10}{76}$ $\frac{-10}{36}$ $\frac{-10}{66}$ $\frac{-10}{26}$ $\frac{-10}{56}$ $\frac{-10}{16}$ $\frac{-10}{46}$ $\frac{-10}{6}$

Therefore, $86 \div 10 = 8 R 6$.

Integrated Review

$$\begin{array}{r}
 7006 \\
 -451 \\
 \hline
 6555
\end{array}$$

3.
$$36$$
 $\times 45$
 $\overline{180}$
 1440
 $\overline{1620}$

- **5.** $1 \cdot 79 = 79$
- **6.** $\frac{36}{0}$ is undefined.
- 7. $9 \div 1 = 9$
- **8.** $9 \div 9 = 1$
- **9.** $0 \cdot 13 = 0$
- **10.** $7 \cdot 0 \cdot 8 = 0 \cdot 8 = 0$
- **11.** $0 \div 2 = 0$
- **12.** $12 \div 4 = 3$
- 13. 4219 -1786 2433
- 14. 1861 + 7965 9826

15. 5)
$$\frac{213}{1068}$$
 R 3 $\frac{-10}{06}$ $\frac{-5}{18}$ $\frac{-15}{3}$

16. 1259
$$\times$$
 63 $\overline{3777}$ 75 540 $\overline{79,317}$

- **17.** $3 \cdot 9 = 27$
- **18.** $45 \div 5 = 9$

19.
$$207$$
 $\frac{-69}{138}$

21.
$$7)\frac{1099}{7695}$$
 R 2
$$-\frac{7}{06}$$

$$-\frac{0}{69}$$

$$-63$$

$$-63$$

$$-63$$

$$2$$

27.
$$\begin{array}{r} 303 \\ \times 101 \\ \hline 303 \\ 0 \\ \hline 30300 \\ \hline 30,603 \\ \end{array}$$

29.
$$\begin{array}{c} 1 \\ 57 \\ +8 \\ \hline 65 \end{array}$$

The total of 57 and 8 is 65.

The product of 57 and 8 is 456.

31.
$$9 \overline{\smash{\big)}\, \begin{array}{c} 6 \\ 62 \\ \underline{-54} \\ 8 \end{array}}$$
 R 8

The quotient of 62 and 9 is 6 R 8.

32.
$$62$$
 -9
 $\overline{53}$

The difference of 62 and 9 is 53.

17 subtracted from 200 is 183.

The difference of 432 and 201 is 231.

		Tens	Hundreds	Thousands
35.	9735	9740	9700	10,000
36.	1429	1430	1400	1000
37.	20,801	20,800	20,800	21,000
38.	432,198	432,200	432,200	432,000

The perimeter is 24 feet.

Area =
$$side \times side$$

= 6 feet \times 6 feet
= 36 square feet

The area is 36 square feet.

The perimeter is 42 inches.

Area = length
$$\cdot$$
 width = $14 \cdot 7 = 98$

The area is 98 square inches.

41.
$$\begin{array}{c} 1 \\ 13 \\ 9 \\ +6 \\ \hline 28 \end{array}$$

The perimeter is 28 miles.

The perimeter is 26 meters.

The average is 24.

The average is 124.

45.
$$28,547$$
 $-26,372$
 $2 175$

Lake Pontchartrain Bridge is 2175 feet longer than the Mackinac Bridge.

46.
$$365 \times 2 \over 730$$

On average, 730 quarts of carbonated soft drinks would be consumed in a year.

Section 1.8 Practice Exercises

1. Transamerica Pyramid is 74 feet taller than 555 California Street
$$\downarrow$$
 \downarrow \downarrow \downarrow \downarrow Transamerica Pyramid = 74 + 779

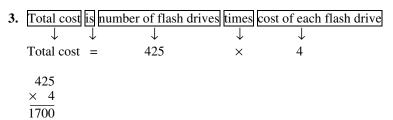
$$\begin{array}{r}
 11 \\
 74 \\
 +779 \\
 \hline
 853
 \end{array}$$

The Transamerica Pyramid is 853 feet tall.

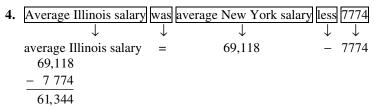
2. Amount of money is \$65,000 divided by four friends
$$\downarrow \qquad \downarrow \qquad \downarrow \qquad \downarrow \qquad \downarrow$$
Amount of money = $65,000 \div 4$

$$\begin{array}{r}
 16250 \\
 4 \overline{\smash{\big)}\ 65000} \\
 \underline{-4} \\
 25 \\
 \underline{-24} \\
 10 \\
 \underline{-8} \\
 20 \\
 \underline{-20} \\
 00 \\
 \underline{-0} \\
 0
 \end{array}$$

Each person receives \$16,250.

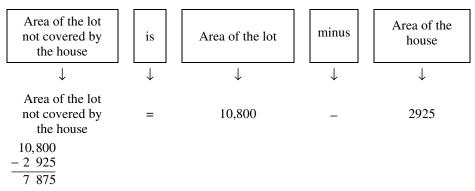


The total cost for the flash drives is \$1700.



The average public school teacher's salary in Illinois was \$61,344.

5. Area of the lot = length \times width = 120 feet \times 90 feet = 10,800 square feet Area of the house = length \times width = 65 feet \times 45 feet = 2925 square feet



The area of the lot not covered by the house is 7875 square feet.

Vocabulary, Readiness & Video Check 1.8

- 1. The George Washington Bridge has a length of 3500 feet.
- 2. multiplication and addition

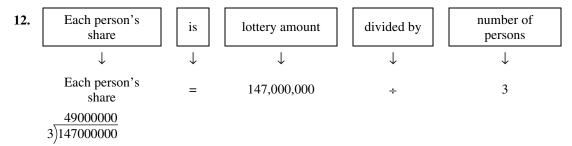
Exercise Set 1.8

2. What is 12 multiplied by 9
$$\downarrow \qquad \downarrow \qquad \downarrow \qquad \downarrow \qquad \downarrow$$
What number = 12 $\cdot \cdot$ 9

- 6. The difference of 48 and 8 is some number $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$ $48 \quad \quad 8 = \text{some number}$ 48
 - $\frac{48}{-8}$
- 8. 60 divided by 10 is some number $\downarrow \qquad \downarrow \qquad \downarrow \qquad \downarrow$ $60 \qquad \div \qquad 10 = \text{some number}$ $10 = \frac{6}{60}$ $-\frac{60}{2}$

The perimeter is 500 feet.

b. Area is length times width $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$ Area = 100 \times 150
The area is 15,000 square feet.

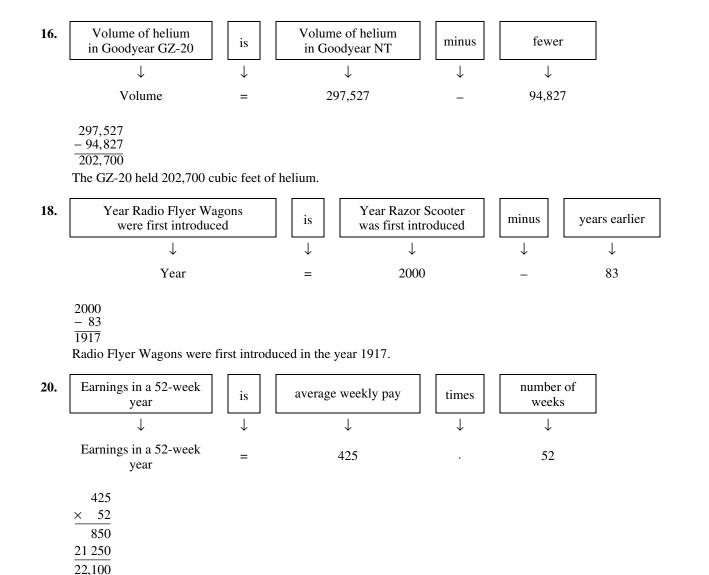


Each person would receive \$49 million.

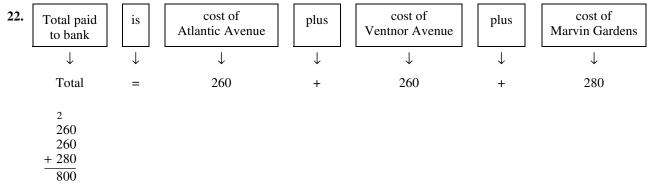
14. Minutes per day is minutes per hour times hours per day $\downarrow \qquad \downarrow \qquad \downarrow \qquad \downarrow$ minutes per day = 60 \cdot 24

$$\begin{array}{r}
 60 \\
 \times 24 \\
 \hline
 240 \\
 \hline
 1200 \\
 \hline
 1440 \\
 \end{array}$$

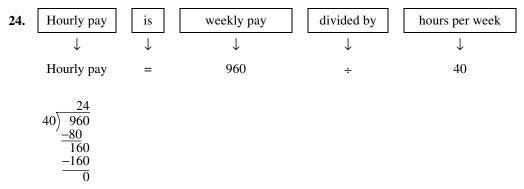
There are 1440 minutes in a day.



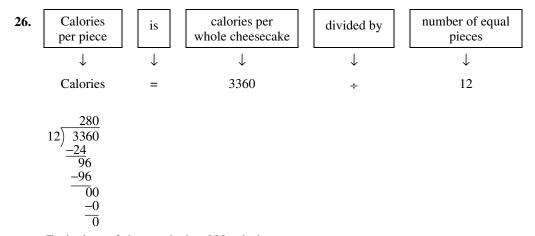
A home health aide will earn \$22,100.



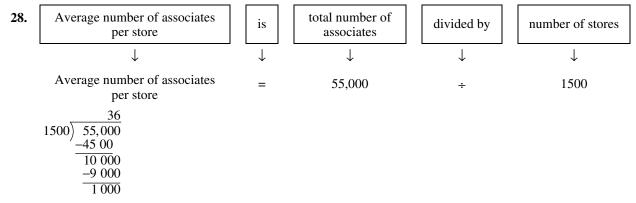
A player must pay \$800 to the bank to purchase the yellow-colored group of properties.



The hourly pay of the paralegal is \$24.



Each piece of cheesecake has 280 calories.



The average number of associates at each PetSmart store was 36.

