

# Place Value

Name \_\_\_\_\_

Date \_\_\_\_\_

| Trillions |      |      | Billions |      |      | Millions |      |      | Thousands |      |      | Ones   |            |   |   |
|-----------|------|------|----------|------|------|----------|------|------|-----------|------|------|--------|------------|---|---|
| hundreds  | tens | ones | hundreds | tens | ones | hundreds | tens | ones | hundreds  | tens | ones | tenths | hundredths |   |   |
|           |      | 5    | 1        | 9    | 0    | 0        | 0    | 5    | 2         | 0    | 0    | 0      | 0          | 8 | 3 |

**Standard Form:** 5,190,005,200,000.83

**Word Name:** five trillion, one hundred ninety billion, five million, two hundred thousand and eighty-three hundredths

**Short Word Name:** 5 trillion, 190 billion, 5 million, 200 thousand and 83 hundredths

Write the place of the underlined digit. Then write its value.

1. 818,218,661,306

2. 58,802,151

\_\_\_\_\_

\_\_\_\_\_

3. 192,955.193007

4. 3,550,584,990.179301

\_\_\_\_\_

\_\_\_\_\_

Write the word name for each number.

5. 16,800,009 \_\_\_\_\_

6. 10.00506 \_\_\_\_\_

Write each number in standard form.

7. one billion, fifty-two thousand, six

8. 45 million, 70 thousand, two hundred

\_\_\_\_\_

\_\_\_\_\_

9. 79 hundred thousandths

10. one hundred six millionths

\_\_\_\_\_

\_\_\_\_\_

## Problem Solving

11. In 2000, the population of New York City was eight million, eight thousand, two hundred seventy-eight. What is the standard form of this number?

\_\_\_\_\_

12. Jordan bought 7.06 meters of rope. What is the word name for this number?

\_\_\_\_\_

# Expanded Form

Name \_\_\_\_\_

Date \_\_\_\_\_

| Standard Form | Expanded Form   |
|---------------|---|
| 326,462       | $(3 \times 100,000) + (2 \times 10,000) + (6 \times 1,000) + (4 \times 100) + (6 \times 10) + (2 \times 1)$ |
| or            |   |
| 326,462       | $300,000 + 20,000 + 6,000 + 400 + 60 + 2$   |

Complete each expanded form.

1.  $243,006 = (\quad \times 100,000) + (\quad \times 10,000) + (\quad \times 1,000) + (\quad \times 1)$

2.  $6,003,080.05 = (\quad \times 1,000,000) + (\quad \times 1,000) + (\quad \times 10) + (\quad \times 0.01)$

3.  $40,000,200,000,100 = (\quad \times 10,000,000,000,000) + (\quad \times 100,000,000) + (\quad \times 100)$

Write the expanded form for each in two ways.

4. 23,893 \_\_\_\_\_  
\_\_\_\_\_

5. 480,216 \_\_\_\_\_  
\_\_\_\_\_

6. 8.201165 \_\_\_\_\_  
\_\_\_\_\_

Write each expanded form in standard form.

7.  $(3 \times 10,000,000,000) + (4 \times 1,000,000,000) + (7 \times 100,000)$  \_\_\_\_\_

8.  $(5 \times 10,000,000) + (6 \times 1,000,000) + (4 \times 100) + (7 \times 1)$  \_\_\_\_\_

9.  $6000 + 200 + 3 + 0.008 + 0.00004$  \_\_\_\_\_

10.  $400 + 0.3 + 0.00007 + 0.000004$  \_\_\_\_\_



# Round Whole Numbers and Decimals

Name \_\_\_\_\_

Date \_\_\_\_\_

**Round to the:**

|                              |                           |                                |                        |
|------------------------------|---------------------------|--------------------------------|------------------------|
| nearest cent                 | nearest thousandth        | greatest place                 | greatest place         |
| $\$23.8722$<br><br>$\$23.87$ | $23.8752$<br><br>$23.875$ | $2,671,813$<br><br>$3,000,000$ | $0.97309$<br><br>$1.0$ |

## Round to the nearest cent.

- |                   |                   |                   |
|-------------------|-------------------|-------------------|
| 1. \$2.399 _____  | 2. \$26.472 _____ | 3. \$12.091 _____ |
| 4. \$.029 _____   | 5. \$.9666 _____  | 6. \$39.995 _____ |
| 7. \$56.433 _____ | 8. \$1.998 _____  | 9. \$.128 _____   |

## Round each number to the underlined place.

- |                            |                             |                            |
|----------------------------|-----------------------------|----------------------------|
| 10. <u>0</u> .73 _____     | 11. 0. <u>2</u> 4 _____     | 12. 0.6 <u>1</u> 7 _____   |
| 13. 25.00 <u>6</u> 5 _____ | 14. <u>4</u> 3.382 _____    | 15. 4.1 <u>2</u> 27 _____  |
| 16. 12.8 <u>0</u> 33 _____ | 17. 4.6 <u>6</u> 66 _____   | 18. 0.4 <u>9</u> 95 _____  |
| 19. <u>8</u> 6.2216 _____  | 20. 400.00 <u>9</u> 7 _____ | 21. 55.5 <u>5</u> 02 _____ |

## Round each number to the greatest nonzero place.

- |                  |                    |                    |
|------------------|--------------------|--------------------|
| 22. 0.64 _____   | 23. 8.23 _____     | 24. 0.7008 _____   |
| 25. 0.488 _____  | 26. 0.86345 _____  | 27. 643.0029 _____ |
| 28. 159.45 _____ | 29. 3205.442 _____ | 30. 2840.75 _____  |

Place the decimal point in each numeral so that the sentence seems reasonable. Then round the decimal to the nearest tenth or nearest cent.

31. Kira hiked 3125 miles in one hour. \_\_\_\_\_
32. Danny bought a new CD for \$15987. \_\_\_\_\_
33. The temperature of the lake water was 58795°F. \_\_\_\_\_

## Problem Solving

34. The measurement of 1 kilometer is equal to 0.62137 miles. Round this decimal to the nearest tenth, hundredth, and thousandth. \_\_\_\_\_
35. The distance between two cities is 325.65 km. About how far apart are they to the nearest kilometer? \_\_\_\_\_

# Subtraction of Whole Numbers and Decimals

Name \_\_\_\_\_

Date \_\_\_\_\_

Subtract:  $4.7 - 1.8265$

- Align the decimal points.
- Write zeros as placeholders as needed.
- Subtract. Regroup if necessary.
- Write the decimal point in the difference.

$$\begin{array}{r} \phantom{3} \overset{16}{8} \overset{9}{10} \overset{9}{10} \\ 4. \underline{7000} \\ - 1.8265 \\ \hline 2.8735 \end{array}$$

Subtract:  $0.667 - 0.485$

$$\begin{array}{r} \phantom{5} \overset{16}{6} \overset{6}{6} \overset{7}{7} \\ 0. \underline{667} \\ - 0.485 \\ \hline 0.182 \end{array}$$

Estimate by rounding. Then find the difference.

1.  $\begin{array}{r} 0.303 \\ - 0.089 \\ \hline \end{array}$

2.  $\begin{array}{r} 7.5321 \\ - 5.4432 \\ \hline \end{array}$

3.  $\begin{array}{r} \$243,907 \\ + 110,462 \\ \hline \end{array}$

4.  $\begin{array}{r} 8,980,329 \\ - 730,464 \\ \hline \end{array}$

5.  $\begin{array}{r} 68,785,018 \\ - 9,127,553 \\ \hline \end{array}$

6.  $\begin{array}{r} 32.86149 \\ - 3.94924 \\ \hline \end{array}$

7.  $\begin{array}{r} 858,824,587 \\ - 650,898,470 \\ \hline \end{array}$

8.  $\begin{array}{r} 177.6637 \\ - 97.18 \\ \hline \end{array}$

9.  $\begin{array}{r} 0.394 \\ - 0.207 \\ \hline \end{array}$

10.  $\begin{array}{r} 7.5124 \\ - 2.4639 \\ \hline \end{array}$

11.  $\begin{array}{r} \$473,403 \\ - 336,941 \\ \hline \end{array}$

12.  $\begin{array}{r} 6,339,712 \\ - 239,394 \\ \hline \end{array}$

13.  $\begin{array}{r} 36,137,993 \\ - 1,943,670 \\ \hline \end{array}$

14.  $\begin{array}{r} 87.63354 \\ - 4.32705 \\ \hline \end{array}$

15.  $\begin{array}{r} 665,920,009 \\ - 638,354,451 \\ \hline \end{array}$

16.  $\begin{array}{r} 338.3346 \\ - 66.36 \\ \hline \end{array}$

Align and estimate by rounding. Then find the difference.

17.  $1.96 - 1.326 = \underline{\hspace{2cm}}$

18.  $0.7175 - 0.5374 = \underline{\hspace{2cm}}$

19.  $8 - 4.42996 = \underline{\hspace{2cm}}$

20.  $3,386,036.57 - 459,465.29 = \underline{\hspace{2cm}}$

21.  $91,493.417 - 103.297 = \underline{\hspace{2cm}}$

22.  $7,913,582,141 - 4,217,299,105 = \underline{\hspace{2cm}}$

## Problem Solving

23. The sum of a number and 532,714 is 789,206.  
Find the number. \_\_\_\_\_

24. Jeff drove his race car at a speed of 299.307 kilometers per hour. Rick drove his car at a speed of 283.98 kilometers per hour.  
How much faster did Jeff drive than Rick? \_\_\_\_\_

# Addition and Subtraction of Decimals

Name \_\_\_\_\_

Date \_\_\_\_\_

Add:  $58.3 + 74.1 + 19.8 = ?$

- Align the decimal points.
- Add. Regroup if necessary.
- Write the decimal point in the sum.

$$\begin{array}{r} 21 \\ 58.3 \\ 74.1 \\ + 19.8 \\ \hline 152.2 \end{array}$$

Subtract:  $0.085 - 0.0094 = ?$

- Align the decimal points.
- Subtract. Regroup if necessary.
- Write the decimal point in the difference.

$$\begin{array}{r} 14 \\ 7410 \\ 0.0850 \\ - 0.0094 \\ \hline 0.0756 \end{array}$$

## Find the sum.

|    |  |    |   |    |   |    |   |    |  |
|----|--|----|---|----|---|----|---|----|--|
| 1. | $\begin{array}{r} 0.47 \\ 0.5 \\ 0.78 \\ + 0.29 \\ \hline \end{array}$ | 2. | $\begin{array}{r} 1.68 \\ 3.7 \\ 6.34 \\ + 9.5 \\ \hline \end{array}$ | 3. | $\begin{array}{r} 12.09 \\ 14.04 \\ 20.35 \\ + 3.6 \\ \hline \end{array}$ | 4. | $\begin{array}{r} 15.04 \\ 3.12 \\ 10.02 \\ + 0.46 \\ \hline \end{array}$ | 5. | $\begin{array}{r} \$10.36 \\ 3.14 \\ 8.24 \\ + 2.03 \\ \hline \end{array}$ |
|----|--|----|---|----|---|----|---|----|--|

|    |   |    |   |    |  |    |   |     |  |
|----|---|----|---|----|--|----|---|-----|--|
| 6. | $\begin{array}{r} 205.319 \\ + 499.161 \\ \hline \end{array}$ | 7. | $\begin{array}{r} 719.274 \\ 225.601 \\ + 46.9 \\ \hline \end{array}$ | 8. | $\begin{array}{r} 0.378 \\ 0.0957 \\ + 0.0154 \\ \hline \end{array}$ | 9. | $\begin{array}{r} 472.665 \\ 996.7 \\ 9.13129 \\ + 125.672 \\ \hline \end{array}$ | 10. | $\begin{array}{r} 0.079 \\ 4.45562 \\ 19.263 \\ + 75.4174 \\ \hline \end{array}$ |
|----|---|----|---|----|--|----|---|-----|--|

## Find the difference.

|     |   |     |  |     |  |     |  |     |  |
|-----|---|-----|--|-----|--|-----|--|-----|--|
| 11. | $\begin{array}{r} 0.6932 \\ - 0.3481 \\ \hline \end{array}$ | 12. | $\begin{array}{r} 0.5 \\ - 0.3889 \\ \hline \end{array}$   | 13. | $\begin{array}{r} 0.81 \\ - 0.687 \\ \hline \end{array}$ | 14. | $\begin{array}{r} 10.43 \\ - 4.921 \\ \hline \end{array}$  | 15. | $\begin{array}{r} 72.1 \\ - 12.385 \\ \hline \end{array}$  |
| 16. | $\begin{array}{r} 36.2 \\ - 24.3295 \\ \hline \end{array}$  | 17. | $\begin{array}{r} \$12.00 \\ - 8.32 \\ \hline \end{array}$ | 18. | $\begin{array}{r} 16.537 \\ - 8.7 \\ \hline \end{array}$ | 19. | $\begin{array}{r} \$13.00 \\ - 7.94 \\ \hline \end{array}$ | 20. | $\begin{array}{r} 4.013 \\ - 0.0987 \\ \hline \end{array}$ |

## Align and add or subtract.

|     |                                     |     |                                    |
|-----|-------------------------------------|-----|------------------------------------|
| 21. | $2655.04 + 976.903 + 699.8 =$ _____ | 22. | $0.57 + 63.6941 + 554.109 =$ _____ |
| 23. | $9433.04 - 6002.395 =$ _____        | 24. | $1.620493 - 0.62717 =$ _____       |

## Problem Solving

25. Roman buys a sandwich for \$3.95. There is also \$0.32 tax. He gives the cashier a \$20 bill. How much change should Roman get? \_\_\_\_\_
26. Laura wants 5 lb of nuts for her mixture. She buys 0.75 lb peanuts, 2.6 lb cashews, and 1.08 lb walnuts. How many more lb of nuts does she need? \_\_\_\_\_

# Multiply with Decimals

Name \_\_\_\_\_

Date \_\_\_\_\_

Multiply:  $12 \times 9.623$

Estimate by rounding.

$$\begin{array}{r} 12 \times 9.623 \\ \downarrow \qquad \downarrow \\ 10 \times 10 = 100 \end{array}$$

Multiply as with whole numbers.

$$\begin{array}{r} 9.623 \\ \times 12 \\ \hline 19246 \\ + 96230 \\ \hline 115476 \end{array}$$

Write the decimal point in the product.

$$\begin{array}{r} 9.623 \\ \times 12 \\ \hline 19246 \\ + 96230 \\ \hline 115.476 \end{array}$$

3 decimal places

Write the decimal point in each product.

1.  $\begin{array}{r} 0.617 \\ \times 8 \\ \hline 4936 \end{array}$

\_\_\_\_\_

2.  $\begin{array}{r} 0.6 \\ \times 21 \\ \hline 126 \end{array}$

\_\_\_\_\_

3.  $\begin{array}{r} 0.419 \\ \times 0.9 \\ \hline 3771 \end{array}$

\_\_\_\_\_

4.  $\begin{array}{r} 62.35 \\ \times 0.26 \\ \hline 162110 \end{array}$

\_\_\_\_\_

5.  $\begin{array}{r} 16.79 \\ \times 1.8 \\ \hline 30222 \end{array}$

\_\_\_\_\_

Multiply. Round to the nearest cent when necessary.

6.  $\begin{array}{r} 0.5 \\ \times 34 \\ \hline \end{array}$

7.  $\begin{array}{r} 0.72 \\ \times 18 \\ \hline \end{array}$

8.  $\begin{array}{r} 0.96 \\ \times 43 \\ \hline \end{array}$

9.  $\begin{array}{r} \$43.25 \\ \times 7 \\ \hline \end{array}$

10.  $\begin{array}{r} 0.613 \\ \times 5.81 \\ \hline \end{array}$

11.  $\begin{array}{r} 0.715 \\ \times 0.02 \\ \hline \end{array}$

12.  $\begin{array}{r} \$7.02 \\ \times 1.6 \\ \hline \end{array}$

13.  $\begin{array}{r} 14.5 \\ \times 6.8 \\ \hline \end{array}$

14.  $\begin{array}{r} \$2.90 \\ \times 2.4 \\ \hline \end{array}$

15.  $\begin{array}{r} \$60.30 \\ \times 5.2 \\ \hline \end{array}$

16.  $0.13 \times \$85.28 =$  \_\_\_\_\_

17.  $2.03 \times 1.2 \times 0.5 =$  \_\_\_\_\_

18.  $0.2 \times 0.4 \times 0.6 =$  \_\_\_\_\_

19.  $0.04 \times 0.1 \times 0.3 =$  \_\_\_\_\_

## Problem Solving

20. Harry bought 4 dozen eggs at \$1.09 a dozen. How much did he pay for the eggs?

21. Lacey bought 15 T-shirts for the hiking club. Each shirt cost \$12.75. How much did Lacey pay for the shirts?

\_\_\_\_\_

22. Mary had 0.8 gallon of milk. She gave 0.3 of the milk to Tom. How much milk did Tom get?

\_\_\_\_\_

23. A square yard of carpeting costs \$46.50. What is the cost of 3.8 square yards?

\_\_\_\_\_

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# Divide Decimals by 10, 100, and 1000

Name \_\_\_\_\_

Date \_\_\_\_\_

To divide a decimal by 10, 100, or 1000:

- Move the decimal point to the *left* one place in the dividend for each zero in the divisor.
- Write zeros in the quotient as needed.

$$5.1 \div 10 = 0.51$$

1 zero: Move 1 place to the left.

$$0.079 \div 1000 = 0.0079$$

3 zeros: Move 3 places to the left.  
Write 2 zeros as placeholders.

To write a decimal between 0 and 1 in **scientific notation**:

- Place the decimal point to the *right* of the first nonzero digit.
- The *negative exponent* of the power of 10 is the number of places the decimal point was moved.

$$0.0053 \rightarrow 5.3$$

$$0.0053 = 5.3 \times 10^{-3}$$

Complete each table. Use patterns to help.

|    | Number | $\div 10$ | $\div 100$ | $\div 1000$ |
|----|--------|-----------|------------|-------------|
| 1. | 16.2   |           |            |             |
| 2. | 8.9    |           |            |             |
| 3. | 165    |           |            |             |
| 4. | 0.72   |           |            |             |

|    | Number | $\div 10$ | $\div 100$ | $\div 1000$ |
|----|--------|-----------|------------|-------------|
| 5. | 1679   |           |            |             |
| 6. | 56.29  |           |            |             |
| 7. | 0.286  |           |            |             |
| 8. | 126.93 |           |            |             |

Divide.

9.  $8 \div 10 =$  \_\_\_\_\_      10.  $93 \div 10 =$  \_\_\_\_\_      11.  $0.47 \div 10 =$  \_\_\_\_\_  
 12.  $2.54 \div 100 =$  \_\_\_\_\_      13.  $0.08 \div 100 =$  \_\_\_\_\_      14.  $3427.1 \div 100 =$  \_\_\_\_\_  
 15.  $1 \div 1000 =$  \_\_\_\_\_      16.  $3.006 \div 1000 =$  \_\_\_\_\_      17.  $82.45 \div 1000 =$  \_\_\_\_\_

Find the value of the variable.

18.  $0.14 \div a = 0.014$       19.  $7.6 \div n = 0.076$       20.  $21 \div b = 0.021$   
 \_\_\_\_\_  
 21.  $d \div 1000 = 3.175$       22.  $m \div 100 = 7.253$       23.  $y \div 100 = 0.32$   
 \_\_\_\_\_

Write in scientific notation.

24. 0.0000067 \_\_\_\_\_      25. 0.0000000129 \_\_\_\_\_      26. 0.00000764 \_\_\_\_\_  
 27. 0.00003 \_\_\_\_\_      28. 0.000845 \_\_\_\_\_      29. 0.004035 \_\_\_\_\_

## Problem Solving

30. Driving at a speed of 100 km per hour, how long will it take to drive a distance of 475.1 km?  
 \_\_\_\_\_

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 © Then go to Lesson 3-5, pages 96–97 in the Student Book.