

# Dividing Decimals by 10, 100, or 1,000

Name \_\_\_\_\_

Reteaching  
7-1

You can use place-value patterns when you divide a decimal by 10, 100, or 1,000.

Sanjai has 27.5 lb of clay. If he uses the clay to make 10 bowls, how much clay will he use for each bowl? What if he makes 100 bowls from the clay? What if he makes 1,000 bowls?

Dividing a number by 10 moves the decimal point one place to the left.

$$27.5 \div 10 = 2.75$$

Dividing a number by 100 moves the decimal point two places to the left.

$$27.5 \div 100 = 0.275$$

Dividing a number by 1,000 moves the decimal point three places to the left.

$$27.5 \div 1,000 = 0.0275$$

Sanjai will use 2.75 lb for each of 10 bowls, 0.275 lb for each of 100 bowls, and 0.0275 lb for each of 1,000 bowls.

Remember: When you divide a number by 10, 100, or 1,000, your quotient will be smaller than that number.

For questions 1 through 6, find the quotient. Use mental math.

1.  $16.4 \div 10$

2.  $38.92 \div 100$

3.  $297.1 \div 100$

4.  $540.9 \div 10$

5.  $41.628 \div 1,000$

6.  $0.33 \div 10$

7. The city has a section of land 3,694.7 ft long. The city wants to make 100 equal-sized gardens with this land. How long will each garden be?

8. Connor divided 143.89 by 100. He said his answer was 14.389. Is this a reasonable answer?

Name \_\_\_\_\_

## Dividing Decimals by 10, 100, or 1,000

Find each quotient. Use mental math.

1.  $86.6 \div 10 =$  \_\_\_\_\_
2.  $192.5 \div 100 =$  \_\_\_\_\_
3.  $1.99 \div 100 =$  \_\_\_\_\_
4.  $0.87 \div 10 =$  \_\_\_\_\_
5.  $228.55 \div 1,000 =$  \_\_\_\_\_
6.  $0.834 \div 100 =$  \_\_\_\_\_
7.  $943.35 \div 1,000 =$  \_\_\_\_\_
8.  $1.25 \div 10 =$  \_\_\_\_\_

Write 10, 100, or 1,000 for each  $n$ .

9.  $78.34 \div n = 0.7834$
10.  $0.32 \div n = 0.032$
11.  $(75.34 - 25.34) \div n = 5$

12. There are 145 children taking swimming lessons at the pool. If 10 children will be assigned to each instructor, how many instructors need to be hired?  
\_\_\_\_\_

13. Ronald ran 534.3 mi in 100 days. If he ran an equal distance each day, how many miles did he run per day?  
\_\_\_\_\_

- A 5      B 5.13      C 5.343      D 6.201

14. Carlos says that  $17.43 \div 100$  is the same as  $174.3 \times 0.01$ . Is he correct? Explain.  
\_\_\_\_\_

Name \_\_\_\_\_

# Estimating Decimal Quotients

7-2  
Reteaching

When estimating with decimal division, you can use compatible numbers to make the math easier. By rounding the dividend and the divisor to numbers that can easily be divided, you will make your math computation easier.

Estimate  $88.95 \div 0.95$ .

$$88.95 \div 0.95 = ?$$

Write the original problem.

$$90 \div 0.90 = 100$$

Write compatible numbers.

For questions 1-4, estimate the quotients.

1.  $12.72 \div 3.6$  \_\_\_\_\_

2.  $9.39 \div 0.92$  \_\_\_\_\_

3.  $0.74 \div .08$  \_\_\_\_\_

4.  $145.22 \div 50.2$  \_\_\_\_\_

5. Mario and three friends purchased a snow blower to share. If the snow blower costs \$439.20, describe how you estimate how much each person will pay?

6. Is 100 a reasonable estimate for  $915.25 \div 88.22$ ?

Name \_\_\_\_\_

## Estimating Decimal Quotients

Practice  
7-2

Use compatible numbers to find each quotient.

1.  $2.90 \div 29$  \_\_\_\_\_
2.  $0.65 \div 5.1$  \_\_\_\_\_
3.  $48 \div 3.2$  \_\_\_\_\_
4.  $18.2 \div 11$  \_\_\_\_\_
5.  $0.18 \div 0.33$  \_\_\_\_\_
6.  $55 \div 10.7$  \_\_\_\_\_
7.  $152 \div 5.12$  \_\_\_\_\_
8.  $117.8 \div 0.12$  \_\_\_\_\_
9.  $41.9 \div 19$  \_\_\_\_\_
10.  $0.6 \div 5$  \_\_\_\_\_
11.  $33.90 \div 10.2$  \_\_\_\_\_
12.  $145 \div 0.3$  \_\_\_\_\_
13.  $502 \div 9.5$  \_\_\_\_\_
14.  $435.2 \div 39$  \_\_\_\_\_
15.  $180.8 \div 6$  \_\_\_\_\_
16.  $60 \div 5.9$  \_\_\_\_\_
17.  $48 \div 3.33$  \_\_\_\_\_
18.  $1.8 \div 20$  \_\_\_\_\_

19. Martin is saving for a gaming system. The total cost of the gaming system and three games is \$325.49. About how much money should he save per week to purchase the gaming system and games in 10 weeks?

- A About \$0.33
- B About \$3.30
- C About \$33.00
- D About \$330.00

20. Kayla works as a hairdresser. She earned \$248.50 in tips in five days. If she earned the same amount each day, about how much did Kayla earn per day? Explain your answer.

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6. Is  $1.72$  a reasonable answer for  $86.25 \div 0.5$ ?

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5. Nathan and Jorge are working on a decimal division problem in math class. After finishing the problem, it looked like this:  $4.76 \div 2.5 = 0.19$ . Nathan said that the decimal is incorrectly placed in the quotient, and Jorge disagrees. Who is right? Explain your answer.

3.  $0.81 \div 0.09 = 90$  \_\_\_\_\_

4.  $1.08 \div 0.27 = 40$  \_\_\_\_\_

1.  $9.72 \div 3.6 = 27$  \_\_\_\_\_

2.  $6.39 \div 0.72 = 8875$  \_\_\_\_\_

For questions 1-4, place the decimal correctly.

How many quarters are in \$3.50? \_\_\_\_\_

Place the decimal:  $14.$  ↑

Use estimation

Whole-number division

Write the original problem

$\$3.50 \div 0.25 = ?$

$350 \div 25 = 14$

When you divide decimals by decimals, you can just divide the decimals as if they are whole numbers. After finding the quotient, place the decimal by estimation.

How many quarters are in \$3.50?

You have learned how to estimate when dividing with decimals. You can also use number sense to place the decimal point in the quotient.

## Number Sense: Decimal Division

Name \_\_\_\_\_

Reteaching  
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Name \_\_\_\_\_

# Dividing by a Whole Number

Practice  
7-4

Find the quotient.

1.  $\$42.78 \div 3$

2.  $66.5 \div 5$

3.  $8.4 \div 10$

4.  $5 \div 500$

5.  $59.6 \div 4$

6.  $188.4 \div 30$

7.  $\$1.25 \div 5$

8.  $235 \div 40$

9.  $11.8 \div 25$

10. Jorge bought 6 tickets to a concert for \$324. What was the cost of each ticket?

11. Tony bought a 72-ounce box of dog biscuits. How many pounds of dog biscuits did he buy? (Remember: 1 pound = 16 ounces.)

- A 4 pounds
- B 4.5 pounds
- C 90 pounds
- D 4,320 pounds

12. Janell uses 66 beads for each necklace she makes. She bought a bag of 500 beads. How many necklaces can she make?

13. In what place is the first digit of the quotient for  $18.88 \div 4$ ? Tell how you know.

# Dividing a Whole Number by a Decimal

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Reteaching

Name \_\_\_\_\_

To divide a whole number by a decimal, multiply both numbers by a power of 10 to make the divisor a whole number.

**Divide:**  $138 \div 0.04$

Multiply by 100 to make 0.04 a whole number. Remember to multiply 138 by 100, too.

$$0.04 \times 100 = 4$$

$$138 \times 100 = 13,800$$

Use long division to find the quotient:

$$\begin{array}{r} 3,450 \\ 4 \overline{)13,800} \\ \underline{12} \phantom{00} \\ 18 \phantom{00} \\ \underline{16} \phantom{00} \\ 20 \phantom{00} \\ \underline{20} \phantom{00} \\ 20 \phantom{00} \\ \underline{20} \phantom{00} \\ 0 \phantom{00} \end{array}$$

So,  $138 \div 0.04 = 3,450$ .

Use long division to find each quotient.

1.  $0.3 \overline{)780}$       2.  $0.5 \overline{)406}$       3.  $0.02 \overline{)1140}$   
 4.  $0.06 \overline{)282}$       5.  $0.08 \overline{)312}$       6.  $0.04 \overline{)619}$

Find each quotient.

7.  $154 \div 0.7$       8.  $3510 \div 0.9$       9.  $228 \div 0.3$   
 10.  $467 \div 0.02$       11.  $106 \div 0.05$       12.  $581 \div 0.04$   
 13.  $3900 \div 0.08$       14.  $207 \div 0.03$       15.  $721 \div 0.25$

16. A kitchen floor has an area of 48 square feet. One tile covers 0.75 square foot. How many tiles would be needed to cover the entire kitchen floor?

17. Mark says that to divide 58 by 0.65, you only need to multiply both numbers by 10 because that will give you a whole number. Jan says you need to multiply both numbers by 100. Who is correct and why?

# Dividing a Whole Number by a Decimal

Find each quotient. Show your work.

1.  $0.7 \overline{)840}$  \_\_\_\_\_
2.  $0.3 \overline{)1,230}$  \_\_\_\_\_
3.  $0.05 \overline{)281}$  \_\_\_\_\_
4.  $0.7 \overline{)287}$  \_\_\_\_\_
5.  $0.6 \overline{)135}$  \_\_\_\_\_
6.  $0.08 \overline{)280}$  \_\_\_\_\_
7.  $4,530 \div 0.06$  \_\_\_\_\_
8.  $315 \div 0.9$  \_\_\_\_\_
9.  $516 \div 0.03$  \_\_\_\_\_
10.  $827 \div 0.2$  \_\_\_\_\_
11.  $45 \div 0.15$  \_\_\_\_\_
12.  $1,233 \div 0.09$  \_\_\_\_\_

13. A 21-pound turkey was cooked for a small banquet. The caterer figures he will discard 5 pounds of bones and that each person will eat 0.8 pounds of the remaining turkey. How many people will the turkey serve?

14. During a regular half-hour TV show, there are 8 minutes of commercials. If each commercial is 0.25 minutes long, how many commercials will be shown during that show?

15. A machine in a deli cooks chickens by rotating them past a heat source. One rotation takes 1.75 minutes, and it takes 35 minutes to fully cook a chicken. How many rotations does it take to cook the chicken?
- A 8      B 14      C 18      D 20

16. One pound of horsehair is divided into "pulls" to make horsehair belts. One "pull" weighs about 0.011 ounces. How many "pulls" could be made from 6 pounds of horsehair?

17. When you divide a whole number by a decimal less than 1, the quotient is greater than the whole number. Why?



# Dividing a Decimal by

## a Decimal

Name \_\_\_\_\_

7-6  
Reteaching

When you divide by a decimal, you need to rewrite the dividend and the divisor so that you are dividing by a whole number.

Find  $4.96 \div 0.8$ .

**Step 1:** Estimate. Use compatible numbers.

**Step 2:** Make the divisor a whole number. Multiply the divisor AND the dividend by the same power of 10.

Place the decimal point in the quotient.

**Step 3:** Divide as you would with whole numbers. Remember that sometimes you may need to annex zeros to complete your division.

estimate.

**Step 4:** Compare the quotient with your

checks.

Because 6.2 is close to 6, the answer

$$480 \div 80 = 6$$

$$0.8 \overline{) 4.96}$$

$$\begin{array}{r}
 6.2 \\
 8 \overline{) 49.6} \\
 \underline{48} \phantom{0} \\
 16 \phantom{0} \\
 \underline{16} \phantom{0} \\
 0
 \end{array}$$

$$\begin{array}{l}
 0.8 \times 10 = 8 \\
 4.96 \times 10 = 49.6
 \end{array}$$

Find each quotient.

1.  $0.02 \overline{) 1.5}$

Estimate: \_\_\_\_\_

Multiply dividend and divisor by what power of 10? \_\_\_\_\_

Place the decimal point in the quotient.

Divide. How many zeros do you need to annex? \_\_\_\_\_

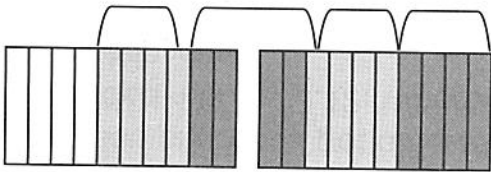
Compare the quotient to your estimate.

Is the answer reasonable? \_\_\_\_\_

2.  $0.06 \overline{) 0.36}$

3.  $0.04 \overline{) 9.6}$

4.  $0.75 \overline{) 0.03}$



5. Fernando used tenths grids to draw this picture showing  $1.6 \div 0.4 = 4$ . Draw a picture to show  $1.8 \div 0.6$ . Write the quotient.

# Dividing a Decimal by a Decimal

Find each quotient.

1.  $8.4 \div 0.03 =$  \_\_\_\_\_
2.  $66.15 \div 0.063 =$  \_\_\_\_\_
3.  $100.5 \div 1.5 =$  \_\_\_\_\_
4.  $860 \div 0.04 =$  \_\_\_\_\_
5.  $72.8 \div 10.4 =$  \_\_\_\_\_
6.  $14.36 \div 0.04 =$  \_\_\_\_\_
7.  $2.87 \div 0.1 =$  \_\_\_\_\_
8.  $78.2 \div 0.2 =$  \_\_\_\_\_

9. How does multiplying both the dividend and the divisor by a factor of 10 sometimes make a problem easier to solve?

For each item, find how many times greater the 2011 cost is than the 1955 cost. Round your answer to the nearest hundredth.

Item	1955 Cost	2011 Cost
Movie admission	\$0.75	\$9.50
Regular popcorn	\$0.25	\$4.25
Regular drink	\$0.35	\$2.75

10. movie admission
11. regular popcorn
12. regular drink

13. Which item has increased the greatest amount of times from its original cost?

14. Divide. Round to the nearest hundredth.  $250.6 \div 1.6$

- A 156      B 156.6      C 156.61      D 156.63

15. Allison and Rhea got different quotients when they divided 4.80 by 0.12. Whose work is correct? Explain why.

Allison  $\frac{0.40}{12} 4.80$

Rhea  $\frac{40.0}{12} 4.80$

Name \_\_\_\_\_

Name \_\_\_\_\_

# Problem Solving: Multiple-Step Problems

Reteaching  
7-7

A multiple-step problem is a problem where you may need more than one step to find your answer.

Marcie was in a 3-day charity walk. Her friend Gayle said she would give the charity \$1.50 for each mile that Marcie walked. The first day, Marcie walked 26.42 miles. The second day, Marcie walked 32.37 miles. The third day, Marcie walked 28.93 miles. How much money did Gayle give?

**Step 1.** Read through the problem again and write a list of what you already know.

Marcie walked 26.42, 32.37, and 28.93 miles.  
Gayle gave \$1.50 for each mile.

**Step 2.** Write a list of what you need to know.

Total amount Gayle gave

**Step 3.** Write a list of the steps to solve the problem.

Find the total number of miles Marcie walked.  
Find the amount Gayle gave.

**Step 4.** Solve the problem one step at a time.

$$26.42 + 32.37 + 28.93 = 87.72 \quad \text{total number of miles Marcie walked}$$
$$87.72 \times \$1.50 = \$131.58 \quad \text{total amount Gayle gave}$$

Use the information above to answer Exercise 1.

1. Marcie's brother Tom was also in the charity walk. He only walked 0.8 as far as Marcie on the first day, 0.7 as far on the second day, and 0.9 as far on the third day. How many miles did Tom walk, rounded to the nearest hundredth of a mile?

2. Diego is buying fruit at the store. Which costs less: 1 pound of each fruit or 4 pounds of peaches?

Fruit	Cost per pound
Apples	\$0.89
Oranges	\$1.29
Peaches	\$0.99
Grapes	\$1.09

# Problem Solving: Multiple-Step Problems

Name \_\_\_\_\_

Practice  
7-7

Write and answer the hidden question or questions in each problem and then solve the problem. Write your answer in a complete sentence.

1. Sue bought 2 pairs of jeans and a belt that cost \$6.95. The tax on the items was \$5.85. Sue paid the cashier \$70.00. How much money did Sue receive in change?

Storewide Sale	
Jeans	\$29.95 for 1 pair OR 2 pairs for \$55.00
T-shirts	\$9.95 for 1 OR 3 T-shirts for \$25.00

2. A recreation department purchased 12 T-shirts for day camp. The department does not have to pay sales tax. It paid with a \$100.00 bill. How much change did it receive?

3. When Mrs. Johnson saw the sale, she decided to get clothes for each child in her family. She bought each of her 6 children a pair of jeans and a T-shirt. She paid \$14.35 in sales tax. How much was Mrs. Johnson's total bill?

- A \$94.35      B \$119.70      C \$229.35      D \$253.35

4. Write a two-step problem that contains a hidden question about buying something at the mall. Tell what the hidden question is and solve your problem. Use \$8.95 somewhere in your equation. Write your answer in a complete sentence.

5. What are hidden questions and why are they important when solving multiple-step problems?