

LESSON
2.4

Name _____ Date _____

Study Guide

For use with pages 71–76

GOAL Divide decimals.

VOCABULARY

Compatible numbers are numbers that make a calculation easier.

DIVIDING DECIMALS

When you divide by a decimal, multiply both the divisor and the dividend by a power of ten that will make the divisor a whole number.

EXAMPLE 1 **Dividing a Decimal by a Whole Number**

A restaurant bill for 12 people came to \$122.88. The people split the bill evenly. Find each person's share.

Solution

To find each person's share, divide 122.88 by 12.

$$\begin{array}{r}
 10.24 \\
 12 \overline{)122.88} \\
 \underline{12} \\
 02 \\
 \underline{0} \\
 28 \\
 \underline{24} \\
 48 \\
 \underline{48} \\
 0
 \end{array}$$

Divide as you would with whole numbers.

Line up the decimal points in the dividend and quotient.

Stop dividing when you get a zero remainder.

Answer: Each person's share is \$10.24.

Exercises for Example 1

Find the quotient. Then check your answer.

1. $58.8 \div 7$

2. $189.75 \div 5$

3. $672.24 \div 8$

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EXAMPLE 2 Dividing Decimals

Divide: a. $2.68 \div 0.4$ b. $36 \div 0.03$

Solution

a. Multiply the divisor and dividend by 10.

$$\begin{array}{r} 0.4 \overline{)2.68} \\ \underline{4} \\ 26 \\ \underline{24} \\ 28 \\ \underline{28} \\ 0 \end{array}$$

Move decimal points 1 place.

$$\begin{array}{r} 6.7 \\ 4 \overline{)26.8} \\ \underline{24} \\ 28 \\ \underline{28} \\ 0 \end{array}$$

b. Multiply the divisor and dividend by 100.

$$\begin{array}{r} 0.03 \overline{)36.00} \\ \underline{3} \\ 36 \\ \underline{36} \\ 00 \\ \underline{00} \\ 00 \end{array}$$

Move decimal points 2 places.

$$\begin{array}{r} 1200. \\ 3 \overline{)3600.} \\ \underline{3} \\ 06 \\ \underline{06} \\ 00 \\ \underline{00} \\ 0 \end{array}$$

Fill quotient with zeros up to the decimal point.

Exercises for Example 2

Find the quotient. Then check your answer.

4. $0.49 \div 0.7$

5. $56 \div 0.14$

6. $0.448 \div 0.32$

EXAMPLE 3 Rounding a Quotient

Find the quotient of 6.7 and 7. Round your answer to the nearest hundredth.

Solution

$$\begin{array}{r} 0.957 \\ 7 \overline{)6.700} \\ \underline{63} \\ 40 \\ \underline{35} \\ 50 \\ \underline{49} \\ 1 \end{array}$$

Bring down a zero as a placeholder.

Bring down a zero as a placeholder.

Stop dividing when the quotient reaches the thousandths' place.

Answer: The quotient of 6.7 and 7 is approximately 0.96.

Exercises for Example 3

Find the quotient. Round your answer to the nearest hundredth.

7. $0.584 \div 3$

8. $27 \div 3.7$

9. $12.54 \div 7.4$