

## **Multiplying and Dividing Decimals**





Goal: Multiply and divide decimals.

#### **Vocabulary**

Leading digit: The leftmost nonzero digit in a number

### **Multiplying Decimals**

Words Multiply decimals as you do whole numbers. Then place the decimal point. The number of decimal places in the product is the total number of decimal places in the factors

Numbers

8.7



#### **Multiplying Decimals** EXAMPLE 1

Deli You buy 1.5 pounds of lunchmeat that costs \$4.98 per pound. How much do you pay for the lunchmeat?

#### Solution

To find how much you pay for the lunchmeat, multiply the cost per pound by the number of pounds.

#### 2490

Remember that you don't need to write the zero in the thousandths' place in your answer.

Answer: You pay

\$7.47 for the lunchmeat.

Hint:

Use unit analysis

to check the units

of your answer.

#### Guided Practice Multiply. Check that your answer is reasonable.

 $1. -8.62 \cdot 2.3$ 2. 15.01 • (-4.95) 3. 1.21 · 0.07

To check that a product is reasonable, round each factor to its leading digit and multiply.

#### **Dividing Decimals**

Words When you divide by a decimal, multiply both the divisor and the dividend by the power of ten that will make the divisor an integer. Then divide.

Numbers 3.25)15.925

Multiply by 100

#### **EXAMPLE 2** Dividing Decimals

To find the quotient 27.048  $\div$  2.8, multiply the divisor and dividend 10. Move the decimal points 1 place to the right.

2.8)27.048

Move decimal points.

Then divide.

✓ Check To check that the quotient is reasonable, round the quotient and the divisor to the leading digit. Then multiply. The result should be close in value to the dividend.

9.66 • 2.8 Round. 10

## **EXAMPLE 3** Using Zeros as Placeholders

To find some quotients, you may need to use zeros as placeholders.

### Placeholder in Dividend

 $\begin{array}{c}
12 \div 1.5 \\
1.5)12.0
\end{array}$ Zero as placeholder  $\begin{array}{c}
8 \\
15)120 \\
120
\end{array}$ 

0

### Placeholder in Quotient

 $0.00519 \div 1.73$ 1.73)0.00519

> 0.003 173)0.519 Remember to use zeros as placeholders.

## Guided Practice Find the quotient. Check that your answer is reasonable.

<b>5.</b> 0.792 ÷ 0.88	<b>6.</b> 15 ÷ 0.25
	V
4 5750 12.00	<b>9.</b> 0.0188 ÷ 9.4
8. 1.9199 - 3.00	
一個的學科學 1000 1000 1000 1000 1000 1000 1000 1	<b>5.</b> 0.792 ÷ 0.88 <b>8.</b> 1.5759 ÷ 3.09

#### **EXAMPLE 4** Multiplying and Dividing with Negative Decimals

**a.**  $-5.3 \times (-1.2)$ 

The decimals have the same sign, so the

product is positive

$$-5.3$$

53

6,36

**b.** 
$$3.77 \div (-1.16)$$

The decimals have different signs, so the

quotient is negative

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# **Guided Practice** Find the product or quotient. Check that the answer is reasonable.

<b>10.</b> $-6.8 \times (-3.1)$	<b>11.</b> -5.5 × 0.32
pala and the state of the state	
<b>12.</b> 11.96 ÷ (-1.3)	<b>13.</b> -3.22 ÷ (-2.8)
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**Homework** 

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