

6-2 Study Guide and Intervention**Rates**

A ratio that compares two quantities with different kinds of units is called a **rate**. When a rate is simplified so that it has a denominator of 1 unit, it is called a **unit rate**.

Example 1 **DRIVING** Alita drove her car 78 miles and used 3 gallons of gas. What is the car's gas mileage in miles per gallon?

Write the rate as a fraction. Then find an equivalent rate with a denominator of 1.

$$\begin{aligned} 78 \text{ miles using } 3 \text{ gallons} &= \frac{78 \text{ mi}}{3 \text{ gal}} && \text{Write the rate as a fraction.} \\ &= \frac{78 \text{ mi} \div 3}{3 \text{ gal} \div 3} && \text{Divide the numerator and the denominator by 3.} \\ &= \frac{26 \text{ mi}}{1 \text{ gal}} && \text{Simplify.} \end{aligned}$$

The car's gas mileage, or unit rate, is 26 miles per gallon.

Example 2 **SHOPPING** Joe has two different sizes of boxes of cereal from which to choose. The 12-ounce box costs \$2.54, and the 18-ounce box costs \$3.50. Which box costs less per ounce?

Find the unit price, or the cost per ounce, of each box. Divide the price by the number of ounces.

$$\begin{array}{ll} 12\text{-ounce box} & \$2.54 \div 12 \text{ ounces} \approx \$0.21 \text{ per ounce} \\ 18\text{-ounce box} & \$3.50 \div 18 \text{ ounces} \approx \$0.19 \text{ per ounce} \end{array}$$

The 18-ounce box costs less per ounce.

Exercises

Find each unit rate. Round to the nearest hundredth if necessary.

- | | |
|---|--|
| 1. 18 people in 3 vans 6 people per van | 2. \$156 for 3 books \$52 per book |
| 3. 115 miles in 2 hours 57.5 mi per h | 4. 8 hits in 22 games 0.36 hits per game |
| 5. 65 miles in 2.7 gallons 24.07 mi per gal | 6. 2,500 Calories in 24 hours 104.17 C per h |

Choose the better unit price.

- \$12.95 for 3 pounds of nuts or \$21.45 for 5 pounds of nuts **\$21.45 for 5 lb**
- A 32-ounce bottle of apple juice for \$2.50 or a 48-ounce bottle for \$3.84.
\$2.50 for a 32-oz bottle