Lesson 6-2

Example 1 Find Unit Rates
TRAVEL   Suzanne drives 165 miles in 3 hours. What is her average speed in miles per hour?

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

$$165 \text{ miles in 3 hours} = \frac{165 \text{ mi}}{3 \text{ h}}$$ Write the rate as a fraction.

$$= \frac{165 \text{ mi} \div 3}{3 \text{ h} \div 3}$$ Divide the numerator and denominator by 3.

$$= \frac{55 \text{ mi}}{1 \text{ h}}$$ Simplify.

The average speed, or unit rate, is 55 miles per hour.

Example 2 Find Unit Rates
SPEED Write *320 feet in 16 seconds* as a unit rate in feet per second.

320 feet in 16 seconds

$$= \frac{320 \text{ ft}}{16 \text{ s}}$$ Write the rate as a fraction.

$$= \frac{320 \text{ ft} \div 16}{16 \text{ s} \div 16}$$ Divide the numerator and denominator by 16.

$$= \frac{20 \text{ ft}}{1 \text{ s}}$$ Simplify.

The unit rate is 20 feet per second.

Example 3 Compare Using Unit Rates
STANDARDIZED TEST PRACTICE
The costs of different sizes of boxes of cereal are shown in the table. Which box costs the least per ounce?

Size	Price
12 oz	$2.64
20 oz	$3.80
32 oz	$5.44
48 oz	$8.64

A 12 oz   **B** 20 oz
C 32 oz   **D** 48 oz

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

12-ounce box	$2.64 ÷ 12 ounces = $0.22 per ounce
20-ounce box	$3.80 ÷ 20 ounces = $0.19 per ounce
32-ounce box	$5.44 ÷ 32 ounces = $0.17 per ounce
48-ounce box	$8.64 ÷ 48 ounces = $0.18 per ounce

The 32-ounce box costs the least per ounce, so the answer is C.

Example 4 Use a Unit Rate
CAR WASH Middle school students holding a car wash to raise money for a class trip can wash 5 cars in 25 minutes. At this rate, how many cars can they wash in one hour?

Find the unit rate. Then multiply this unit rate by 60 to find the number of cars they can wash in one hour (60 minutes).

$$5 \text{ cars in } 25 \text{ minutes} = \frac{5 \text{ cars} \div 25}{20 \text{ min} \div 25} = \frac{0.20 \text{ cars}}{1 \text{ min}}$$ Find the unit rate.

$$\frac{0.20 \text{ cars}}{1 \text{ min}} \cdot 60 \text{ min} = 12 \text{ cars}$$ Divide out the common units.

The students can wash 12 cars in one hour.