

Rates (pages 321–324)

A **rate** is a ratio of two measurements with different units. A **unit rate** is a rate in which the denominator is 1 unit.

EXAMPLES

- A** In a bike race, Tariq rode 42 km in 2 hours. What was his unit rate?

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

$$\begin{aligned}\frac{\text{km}}{\text{hr}} &= \frac{42}{2} \\ &= \frac{42 \div 2}{2 \div 2} \quad \text{The GCF of 42 and 2 is 2.} \\ &= \frac{21}{1}\end{aligned}$$

Tariq rode at a rate of 21 km per hour.

- B** **Population density** is the number of people per square mile. What is the population density of a town with a population of 5,250 and an area of 5 square miles?

$$\begin{aligned}\frac{5,250 \text{ people}}{5 \text{ sq. mi}} &= 5,250 \div 5 \quad \text{Divide.} \\ &= 1,050 \text{ people per square mile}\end{aligned}$$

Try These Together

Express each rate as a unit rate.

1. \$50 for 10 days

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

2. 8 revolutions in 2 minutes

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

PRACTICE

Express each rate as a unit rate.

- 300 tourists in 4 days
- 720 miles in 8 days
- 512 yards in 8 minutes
- \$1.98 for 2 ounces
- \$22.32 for 18 gallons
- 240 miles in 3 hours
- 16 books in 4 days
- 35 people in 5 vans
- Sales** A company sold 3,000 popcorn poppers last year. On average, how many popcorn poppers did they sell each month?



- 12. Standardized Test Practice** Which of the following gas stations sells gas for the best price per gallon?

- A** \$18.75 for 15 gallons **B** \$16.64 for 13 gallons
C \$26.00 for 20 gallons **D** \$19.68 for 16 gallons

Answers: 1. \$5 per day 2. 4 revolutions per minute 3. 75 tourists per day 4. 90 miles per day 5. 64 yards per minute 6. \$0.99 per ounce 7. \$1.24 per gallon 8. 80 miles per hour 9. 4 books per day 10. 7 people per van 11. 250 popcorn poppers per month 12. D