

**Practice
11-1****Unit Rates**

1. A box of dried fruit has 36 calories in 3 servings. How many calories are there per serving?
2. In a week, 20 hens laid 80 eggs. What is the unit rate for eggs per hen?
3. A 15-pound bag of wildflower seed covers 40 square feet. How many pounds of seed does it take to cover 1 square foot?
4. An animal gained 6 pounds steadily over 12 years. What is the unit rate of pounds per year?
5. A plant grew 19 inches over 5 months. The plant grows the same amount each month. Use this rate to complete the table.

Month	Growth (inches)
1	_____
2	_____
3	_____
4	_____
5	19
6	_____

6. A migrating bird flies 420 miles in 14 hours. How many miles does it fly in 5 hours?
7. **a) Writing** Exactly 240 years ago, students planted a tree in front of their school. Since then, the tree has grown 30 meters taller, and the distance around the trunk has increased by 3 meters. Describe how you can use this information to find at least two different unit rates.
b) Find the unit rate for the increase in the tree's trunk.

- 8. Multiple Representations** A vehicle uses 7 gallons of gasoline to travel 252 miles. The vehicle uses gasoline at a steady rate.

- a) Draw a picture that models the situation.
- b) Complete the table of equivalent ratios.

Gallons	Miles
1	_____
2	_____
3	_____
7	252
14	_____
21	_____

- c) Use the table to find the number of gallons of gasoline the vehicle uses to travel 108 miles.
- 9. Error Analysis** Adrianne and Burt are in the same keyboarding class. The teacher says they both type at 72 words per minute. Adrianne writes this unit rate as $\frac{1 \text{ minute}}{72 \text{ words}}$. Burt writes it as $\frac{72 \text{ words}}{1 \text{ minute}}$. Which ratio does not correspond to the unit rate 72 words per minute? What is the mistake?
- 10. Air Travel** An airplane on autopilot took 7 hours to travel 4,851 kilometers. What is the unit rate for kilometers per hour?
- 11. Estimation** A stalactite grows 30 millimeters in 149 years. Estimate the unit rate of growth per year.
- 12. Reasoning** One 80-pound bag of lawn-care product treats 100 square feet of lawn.
- a) Describe at least three ways to find the number of 80-pound bags needed to treat 1,600 square feet of lawn.
- b) How many 80-pound bags do you need to treat 1,600 square feet of lawn?
- 13.** A test found 41 flaws per square meter of an experimental flame-proof cloth. The test counted flaws on 9 square meters of the cloth. What ratio did the testers likely use to find the unit rate for flaws per square meter?

- 14. Think About the Process** The holding pond at a local factory is leaking. A reporter hears that the pond leaks 104.5 gallons of contaminated water every 19 days. The reporter wants to make a table showing how much leaks in 1 day, 1 week, 2 weeks, and 1 month of 30 days.

a) Find the best first step to make this table.

- ☐ A. Divide the number of days by the unit rate.
- ☐ B. Multiply the unit rate by the number of days.
- ☐ C. Convert the number of days to weeks.
- ☐ D. Use the given ratio to find the unit rate.

b) Complete the table.

Time	Gallons
1 Day	_____
1 Week	_____
2 Weeks	_____
1 Month	_____

- 15. Think About the Process**

- a) Describe how to write the unit rate 0.375 parking space per customer as a ratio.
- b) Then write the unit rate as a ratio of whole numbers in simplest form.