

Objective Introduction to Unit Rates

Warm-Up



Determine each unknown quantity.

$$1. \frac{9 \text{ arrows}}{3 \text{ bows}} = \frac{108 \text{ arrows}}{? \text{ bows}}$$

$$2. \frac{3 \text{ ahoes}}{8 \text{ socks}} = \frac{? \text{ shoes}}{160 \text{ socks}}$$

$$3. \frac{27 \text{ arrows}}{3 \text{ bows}} = \frac{? \text{ arrows}}{1 \text{ bows}}$$

$$4. \frac{6 \text{ ahoes}}{100 \text{ socks}} = \frac{1 \text{ shoes}}{? \text{ socks}}$$



Movie theater popcorn is sold in notoriously large quantities. The smallest size popcorn usually contains at least 2 servings of popcorn. And, when you're eating all of that popcorn, you have to get a drink!

1. Compare the prices for various sizes of popcorn sold at the local movie theater.

Mega Bag (32 oz) \$10.24

Giant Bag (24 oz) \$6.00

Medium Bag (16 oz) \$4.48

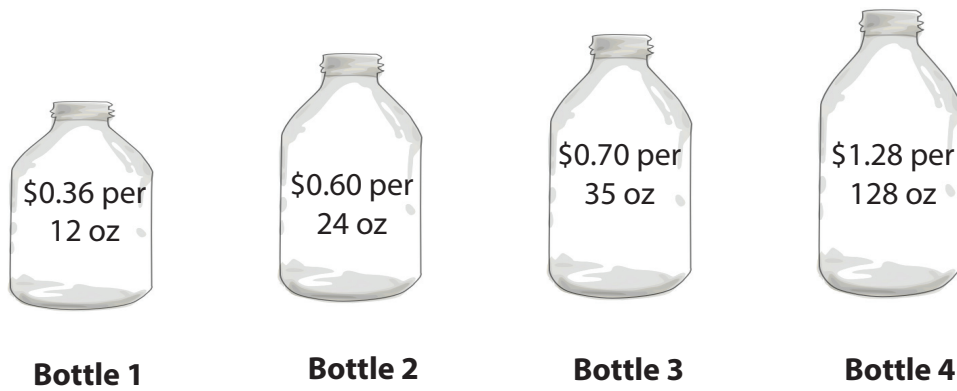
Kid's Bag (8 oz) \$2.40

a. What is the unit rate price per ounce for each bag of popcorn? Calculate each rate

Mega Bag	Giant Bag	Medium Bag	Kid's Bag
$\$10.24 \div 32 \text{ oz}$ $\frac{10.24}{32} = 0.32$ \$0.32 per ounce			

b. What size popcorn is the best buy? Explain your reasoning.

2. Bottles of water are sold at various prices and in various sizes. Write the price of each bottle as a ratio, and then as a unit rate. Which bottle is the best buy? Explain how you know.



3. Use unit rates to determine which is the better buy. Explain your reasoning.

a. 22 vitamins for \$1.97 or 40 vitamins for \$3.25

b. 24.3 ounces for \$8.76 or 32.6 ounces for \$16.95



The local paper published these rates on gas mileage for a few new cars.



Avarar can travel
480 miles on 10 gallons of gas.



Sentar can travel
400 miles on 8 gallons of gas.



Comstar can travel
360 miles on 9 gallons of gas.

1. Change each rate to a unit rate so that it reports miles per one gallon of gas.

a. Avarar

b. Sentar

c. Comstar

2. How did you calculate each unit rate?

3. How can unit rates help you to compare these cars?

4. Guests at a dinner play are seated at three tables. Each table is served large, round loaves of bread instead of individual rolls. Each person at the table shares the loaves equally.

Table 1 has six guests and is served two loaves of bread.
Table 2 has eight guests and is served three loaves of bread.
Table 3 has 10 guests and is served four loaves of bread.
Table 4 has 16 guests and is served six loaves of bread.



a. Write each rate of guest to loaves of bread

b. Do not simply or calculate, but predict at which table the guests will get the largest serving of bread.

c. Determine how much bread each guest at each table will receive. Was your prediction accurate?

d. How can an equal distribution of loaves of bread to every guest be accomplished?



LESSON 6.2b
What is the Best Buy?



Objective

Introduction to Unit Rates

Practice

Find each unit rate. Then write which is the better buy.

15. \$0.90 for 2 pens or \$1.75 for 5 pens

16. \$2.25 for 3 tennis balls or \$6.24 for 8 tennis balls

17. \$1.92 for 4 apples or \$4.20 for 10 apples

18. \$24 for 6 pounds of cereal or \$45 for 9 pounds of cereal

Choose the best answer.

19. A chef uses 1 cup of cheese per 2 cups of milk in a casserole. How many cups of cheese are needed if the chef uses 6 cups of milk?

- A. 2 cups
- B. 3 cups
- C. 5 cups
- D. 6 cups

20. Javier scored 30 goals in 15 soccer games. Using the unit rate, how many goals will he score in 20 games?

- A. 35 goals
- B. 40 goals
- C. 45 goals
- D. 60 goals

Solve.

21. The coach pays \$72 for 18 hamburgers. What is the cost per hamburger?

22. Ayesha's puppy gained 36 pounds in 9 weeks. Using the unit rate, how many pounds did the puppy gain in 5 weeks?
