Ratio and Rate

1. Simplify each ratio.

a. 4 to 8   c. 2 to 8   e. 20 to 50   g. 9 to 6

b. 6 to 9   d. 5 to 15   f. 12 to 4   h. 14 to 7

2. In Mariah's kindergarten class, there are 9 girls and 15 boys.
a. What is the ratio of girls to boys?
b. What is the ratio of boys to girls?

3. Last summer Stacey's softball team won 6 of the 9 games they played.
a. What is the ratio of the games they won to the games they played?
b. What is the ratio of the games they won to the games they lost?

4. A brand of vitamin pills comes in two sizes. The smaller bottle of 60 tablets costs $5.40. The larger bottle of 90 tables cost $7.20.
a. Find the cost per tablet for the smaller bottle.
b. Find the cost per tablet for the larger bottle.
c. Which bottle is the better buy?

5. Blake bought 4 pounds of hamburger for $5.40.
a. What is the unit rate?
b. At this rate, how much will Blake pay for 13 pounds?

6. Reese walk 9 km in 2 hours.
a. How far does Reese walk in 1 hour?
b. At this rate how far can Reese walk in 7 hours?

7`. Julia measured her heart rate. She counted 16 beats in 12 seconds. At this rate, how many times does Julia's hear bear each minute (60 seconds)?

Proportions

1. Solve each proportion.

   a. $\dfrac{x}{2} = \dfrac{6}{8}$

   b. $\dfrac{x}{4} = \dfrac{9}{12}$

   c. $\dfrac{5}{n} = \dfrac{20}{8}$

   d. $\dfrac{12}{18} = \dfrac{x}{3}$

   e. $\dfrac{x}{7} = \dfrac{2}{16}$

   f. $\dfrac{3.7}{9.2} = \dfrac{2.8}{x}$

2. Cantaloupes are on sale for 2 for $1.32. At this rate, what is the cost of 14 melons?

3. A recipe for 9 servings of dessert calls for 2 cups of sugar. How much sugar is needed to make 15 servings?

4. Jan traveled 384 kilometers on 12 litres of gasoline. How far can Jan travel on 30 litres of gasoline?

Percents and Decimals

1. Write the percent. You may need to round to the nearest hundredth.

   a. $\dfrac{1}{4}$ c. $\dfrac{13}{50}$ e. $\dfrac{8}{25}$ g. $\dfrac{9}{13}$

   b. $\dfrac{3}{5}$ d. $\dfrac{9}{10}$ f. $\dfrac{11}{12}$ h. $\dfrac{47}{60}$

2. Calculate each of the following.
   a. 1% of 52   c. 13% of $19.95   e. 90% of 947
   b. 10% of 17   d. 7% of 53.45   f. 32% of 60

3. Write the fraction in simplest terms.
   a. 22%   c. 75%   e. 48%   g. 86%
   b. 8%   d. 35%   f. 97%   h. 12.4%

4. Write the decimal.
   a. 72%   c. 3%   e. $3\dfrac{1}{4}$%   g. 89%
   b. 29%   d. 25.6%   h. 0.2%
                                   f. 6.35%

5. Most restaurant diners leave a tip of about 20% of the cost of the meal. Estimate the tip for a meal that costs $42.95.

6. Mr. Kolodzie's track team won 15 out of 25 events. What percent of the events did they win?

7. A lion sleeps 80% of the time. For how many hours per day would you expect a lion to be awake?

8. Which is greater: 27% of 72 or 72% of 27? Explain.

9. A bike costs $549.99 is on sale for 20% off.
   a. What is the sale price of the bike?
   b. What is the cost of the bike with HST?