Section 6 Review Answers

1. Write the ratio in fractional form and simplify if possible. Also, state your answer in words.
   a. $4 : 6$
   b. $5.6 \text{ days} : 10 \text{ days}$
   c. $232 \text{ calories} : 116 \text{ calories}$

   Ans:
   
   \[
   \frac{4}{6} = \frac{2}{3} \quad \frac{5.6 \text{ days}}{10 \text{ days}} = \frac{56}{100} = \frac{14}{25} \quad \frac{232 \text{ calories}}{116 \text{ calories}} = 2
   \]

2. Write a phrase for the following ratio.
   a. $\frac{100 \text{ tons}}{28 \text{ tons}}$
   b. $\frac{15 \text{ smokers}}{25 \text{ nonsmokers}}$

   \[
   \frac{100}{28} = \frac{25}{7} \quad \frac{15}{25} = \frac{3}{5}
   \]

   25 tons for every 7 tons
   3 smokers for every 5 non smokers

3. Are the following proportional?
   a. $\frac{3}{4} = \frac{6}{8}$
   b. $\frac{1}{2} = \frac{20}{39}$
   c. $\frac{4}{3} = \frac{2}{5}$

   Yes
   No
   Yes (Convert to improper fractions then cross multiply.)

4. Simplify the rate to a unit rate, and write the unit rate in words.
   a. $\frac{120 \text{ km}}{3 \text{ hours}}$
   b. $\frac{18 \text{ miles}}{9 \text{ hours}}$
   c. $\frac{217 \text{ miles}}{29 \text{ sec}}$

   $40 \text{ km/hr}$
   $2 \text{ miles/hr}$
   $7.48 \text{ miles/sec}$

5. Which is the better buy?
   a. Scope Mouth wash: 33 fl oz costs $3.97 whereas 50 fl oz costs $5.78. 50 oz bottle
   b. Crest Toothpaste: 6.2 oz costs $2.97 whereas 8 oz costs $3.47. 8 oz tube
   c. Maxwell House Coffee: 13 oz costs $2.28 whereas 26 oz costs $4.88. 13 oz can

6. Solve for n in each proportion:
   a. $\frac{30}{25} = \frac{18}{n}$
   b. $\frac{21}{n} = \frac{15}{25}$
   c. $\frac{3.6}{48} = \frac{1.5}{x}$

   \[
   n = 15 \quad n = 35 \quad x = 20
   \]

7. Solve each of the following using proportions:
   a. If 2 six-packs of cream soda cost $3.50, how much will 5 six-packs cost? The 5 six-packs would cost $8.75
   b. A clothing inspector found that out of 75 pairs of shoes, 12 pair were flawed. At this rate, how many flawed pairs would you expect to find in a batch of 500 pairs of shoes? 80 shoes would be flawed
c. A city measure in Oregon proposed that homeowners be taxed 39 cents per every $1000 of property value to help maintain parks and to fund recreation programs. How much would the owner of a $135,000 home pay? This homeowner will pay $52.65.

8. Write each decimal as an equivalent percent.
   a. .871  b. .6  c. .07  d. 1.25  e. .003
   87.1%  60%  7%  125%  .3%

9. Write each fraction as an equivalent percent.
   a. $\frac{27}{100}$  b. $\frac{1}{2}$  c. $\frac{3}{8}$  d. $\frac{1}{3}$  e. $\frac{15}{4}$
   27%  50%  37.5%  33.3%  375%

10. Write each percent as an equivalent decimal.
    a. 33%  b. 6.3%  c. 5%  d. 7.75%  e. $64\frac{1}{2}$%
    .33  .063  .05  .0775  .645

11. Translate to an equation. Then solve.
    a. 30.6 is what percent of 90? Let x=percent, 90x=30.6, x=34%
    b. 63 is 84% of what number? Let x=part 63*.84=x, x=52.92
    c. What is $38\frac{1}{2}$% of 146? Let x=part, .385*146=x x=56.21
    d. What is 10.5% of 84? x=part, .105*84=x x=8.82

12. Solve each application. Write a sentence answering the question.
    a. Food expenses account for 26% of the average family's budget. A family makes $2300 one month. How much do they spend for food? $598 is spent on food
    b. Of the 281 million people in America, 123.64 million take at least one prescription drug per day. What percent take at least one kind of prescription drug per day? 44%
    c. The price of a graphing calculator was reduced from $110 to $93.50. Find the percent of decrease in price. The price decreased 15%
    d. An iPod is priced at $375 is discounted at the rate of 14%. What is the amount of discount and the sale price? Also, determine the final sale price with sales tax rate of 7.75%. Discount would be $56.25. The new price would be $318.75. The final sale price after taxes is $343.45.
    e. Kim earns $753.50 selling $6850 worth of televisions. What is the commission rate? 11%
    f. What is the simple interest on $1800 at 6% for 4 months? Interest is $36
    g. The Klein's invest $7500 in an investment account paying 12% simple interest. How much money will be in the account after 3 months? Interest earned is $225, so the amount in the account would be $7725.