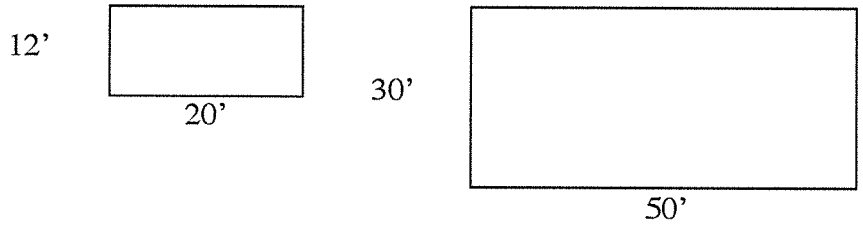
Chapter 4 Study Guide

Name: _____
Date: _____
Class: _____

Show all your work and <u>remember your labels!</u>

1. Consider the two rectangles shown below.



a. Are the two rectangles **similar**? How do you know? You need to say more than that they look alike, back up your answer with numbers or calculations.

b. Show your work to calculate both perimeters. What is the **<u>simplified</u>** scale factor or enlargement ratio of the two perimeters?

Scale Factor: _____

c. Show your work to calculate both areas. What is the **<u>simplified</u>** ratio of the area of the larger rectangle to the area of the smaller rectangle?

Ratio: _____

2. Madeline can decorate 100 cookies in 2 hours. If she continues at this rate, how many cookies can she decorate in 3 ½ hours? Show your ratio table or calculations.

Answer: _____

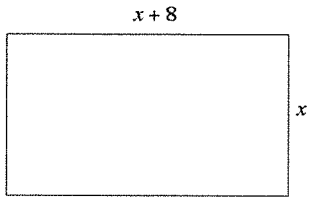
3. During the hour before the football game started, the home team sold m tickets. During the hour after the game started, the home team sold n tickets. All tickets cost $1.50. Circle the expression which best represents the amount of money collected during the two hours.

A. $1.5m + n$ B. $1.5n + m$

C. $1.5\,(m + n)$ D. $1.5\,(m - n)$

4. Use substitution and show your work to find the **perimeter** of the rectangle to the right. Show your work (remember those parentheses!)

a. $x = 3$?



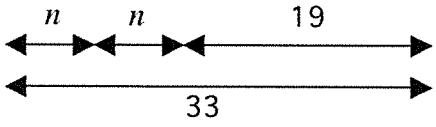
P = _____

b. $x = 12.5$?

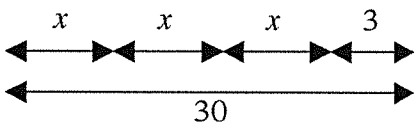
P = _____

5. Show your work to find the value of the variables in each problem below.

a.



n = _____



x = _____

6. Bill is making up a trail mix and he wants to make sure that the ratio of peanuts to raisins to chocolate chips is 5:3:2. Show all of your work to calculate the following:

a. What percent of the trail mix is made up of raisins?

Percent: _____

b. If he uses 21 ounces of raisins, how many ounces of trail mix will he have altogether?

Answer: _____

7. A 40' building at a particular time casts a 15' shadow. A 16' flagpole is nearby. What will be the length of the flagpole's shadow? Draw and label a picture and then show your work to get the answer.

Answer: _____

8. Rewrite and evaluate the following expressions for: **x = -4, y = 6, z = -10**

a. $5y+z=$ _____

b. $3(6-z)=$ _____

c. $x-(-y)=$ _____

d. $\frac{y^2}{x-z}=$ _____

e. $|y+z|=$ _____

f. $z+x=$ _____

g. $z+2y^2=$ _____

h. $\frac{1}{2}y+y=$ _____

i. $|y|-|z|=$ _____

j. $-|2y-x|=$ _____

9. Simplify the following expressions:

a. $\frac{304}{.011}=$

b. $\frac{.0285}{1.5}=$

10. Corey drew a triangle and the sides are 24cm, 28cm, and 38cm. He wants to draw a new, similar triangle and he wants to use a scale factor of ¾.

Will his new triangle be larger or smaller than the original? _____

The length of each side of the **new** triangle will be what percent of the length of each corresponding side of the **original** triangle?

_____

What will be the lengths of the 3 sides of the new triangle?

Side #1 _____

Side #2 _____

Side #3 _____