Proportions Review (Chapter 6) Name: _____

1) Ms. Hall conducted a survey of her students on the pets they have at home. 63 students have a dog, 27 students have a cat, and 20 students have a fish.

   a) What is the ratio of cats to dogs? Give answer in ***simplest form.***

   b) What is the ratio of fish to total pets?

2) Ms. Hall's went to Starbucks and there were three different sizes of drinks. Which should she order? **Identify** the best deal. **Explain** your reason. *Show work for all three sizes! Did you label your answer?*

Size (oz)	Cost ($)
12	$2.52
16	$2.91
20	$3.89

3) You read 208 pages in 4 hours.

   a) Express this as a unit rate

   b) Determine how many pages you read in 7 hours

4) Write a proportion that could be used to solve for the situation. ***Then solve***!

   72 miles in 3 hours
   120 miles in x hours

5) Solve the proportion for the given variable.

$$\frac{k}{18} = \frac{2}{9}$$

6) Ms. Hall pumps 13.2 gallons of gas. How many liters is this?
(Hint: 1 liter = .264 gallons)

7) The amount of money you spend on your favorite pair of jeans that you keep buying over and over is a proportional relationship. You spend $79.90 on two pairs of jeans.

   a. **Determine** how much you spend if you buy 5 pairs

   b. **Determine** how many pairs you bought if you spent $359.55

8) St. Paul is 2.25 inches from Minneapolis on a map. What is the actual distance between the cities if the scale is 1.5 inch = 8 miles?

9) An apple tree in a photograph is 4 inches in height. If the tree is 18 feet tall, what is the scale?

10) A scale on a blueprint is 2 cm = 5 feet. Complete the table:

	Room	Blueprint	Actual
1.	Bedroom	2.5 cm	
2.	Kitchen		15 ft

11) Ms. Hall runs on average 8 miles in a five day period. How many miles would she run in 9 days?

   a. 1.6 miles
   b. 14.4 miles
   c. 5.625 miles
   d. 18.8 miles

12) 5 centimeters is equal to 1.97 feet. How many centimeters are in 4 feet?

   a. 5.08 cm
   b. 2.4625 cm
   c. 10.15 cm
   d. 1.576 cm

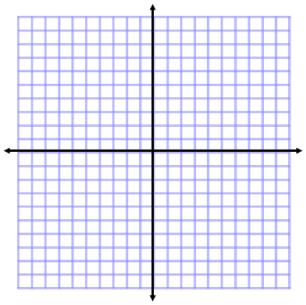
REVIEW Ch 8

1) **Find** five solutions of $y = \frac{1}{2}x$. **Write** the solutions as ordered pairs. **Graph** by plotting ordered pairs.

a.

x		y	(x, y)
-2			
-1			
0			
1			
2			

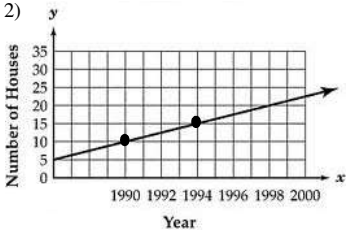
b.



c. Is this **proportional?** Why or why not? **Explain.**

Find the **rate of change** for each relationship. ***Label*!**

2)



3)

Hours (x)	2	5	9
Profit (y)	15	37.5	67.5

2)_____

3)_____

4) The total distance you have traveled *varies directly* with the number of hours you drive. You can travel 452 miles in 7 hours.

4a) _____

a) **Write an equation** that could be used to find total distance traveled for x number of hours driven.

4b) _____

b) **Calculate** the distance you will travel after driving for 16 hours. *Remember the label*!

5) Which represents a **proportional** relationship?

a.

x	1	2	3
y	5	10	15

b.

x	1	2	3
y	-5	-15	-20

c.

x	0	2	4
y	0	1	8

d.

x	1	5	9
y	1	6	10

6) **WORK** Tyler is applying for summer jobs. He is considering working for Valley Fair and has been told by friends what he might be making shown in the table. **Find** the rate of change. **Interpret** its meaning.

Hours	**Money Earned**
x	y
3	24
5	40

7) **RENTAL** The amount you pay for renting a kayak is directly proportional to the number of hours you want to rent for. Suppose you have to pay $15 to rent a kayak for 2 hours.

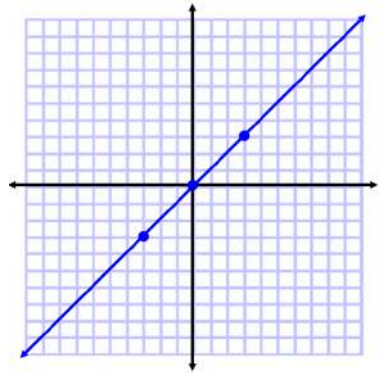
a) **Find** the constant of variation, k.

b) **Write an equation** that relates hours you rent for, h, to total cost, c.

c) How much would you have to pay to rent a kayak for 5 hours?

8) **FOOD** The weekly cost of Ms. Pint's grocery bills is given by $c = 55 \cdot w$, where w is the number of weeks she is shopping for groceries. What is the slope in this situation? ***Explain*** what it means.

9) Use the graph at right to answer the following:



a) What is the **slope** of the line?

b) Is this graph **proportional**? *Why or why not*?

c) **Graph** the function if the slope changes to 4 *(Use the same graph as the first line)*

x				
y				

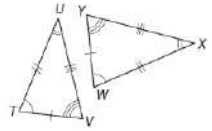
Similarity and Congruence Unit AND Volume and Surface Area

- ✓ ***I can identify corresponding angles and corresponding sides of similar and congruent figures.***
- ✓ ***I can set up and solve proportions to find missing measurements in similar figures.***
- ✓ ***I can measure indirectly using proportions.***
- ✓ ***I can calculate the scale factor of similar figures.***
- ✓ ***I can apply the formulas to find the volume and surface area of cylinders.***

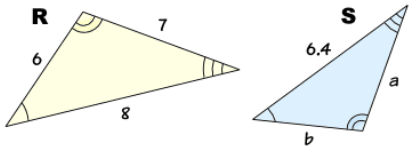
1) If $\triangle RAT \cong \triangle PIG$, which line segment is congruent to $\overline{RA}$?

Which angle is congruent to $\angle P$?

2) Ms. Pint is using origami to make a paper crane. In the process, she notices that $\Delta TUV \cong \Delta WXY$. What is the length of $\overline{YW}$ if $\overline{WX} = 5$ inches and $\overline{VT} = 3.5$ inches?



3) Find the value of a if: $\Delta R \sim \Delta S$



4) If $\triangle CAT \sim \triangle DOG$, $m\angle A = 25°$, $m\angle = 110°$, $\overline{AT} = 5$ cm, $\overline{OG} = 10$ cm, and $\overline{CA} = 3$ cm.

a. Find the measure of $\angle G$.

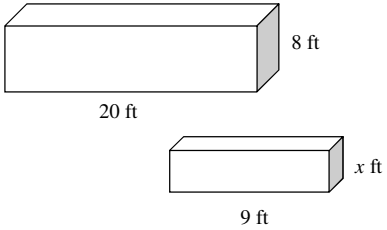
b. Find the length of $\overline{DO}$.

5) Ms. Schroeder is approximately 6 feet tall and casts a 4 foot shadow at 3:00 P.M. At that time, a nearby chairlift post casts a shadow that is 14 feet.

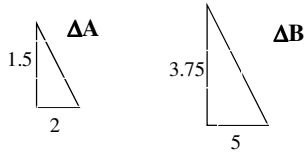
a.) How tall is the chairlift?

b.) Two hours later, Ms. Schroeder's shadow is 10 feet long. What is the length of the shadow of the chairlift at this time?

6) Find the missing value if the solids are similar.

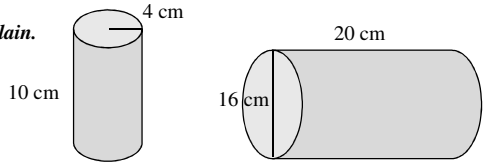


7) Given the two similar triangles below, what is the scale factor from ΔA to ΔB?



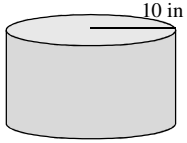
A) 1	B) 2	C) 2.5	D) 3.75

8) Are the solids similar? ***Explain.***



Find the volume and surface area of the cylinders below.

9)



Volume: _____

Surface Area: _____

10)

Volume: _____

Surface Area: _____

11) Ms. Hall has a cylindrical bucket of ice cream to share at her next NJHS meeting. The bucket has a radius of 6 inches and can hold a volume of 905 in^3 of ice cream. What is the height of the ice cream bucket to the nearest inch? ***(Hint: Draw and label a picture)***