Chapter 2 Review Worksheet

Answer the following on NOTEBOOK PAPER. Show All Work on problems. Be sure and skip lines between each question. You do not have to copy the questions.

1. Identify each of the following is an example of *observation and data*, a *theory*, a *hypothesis*, a *control*, or a *model.*

   _____ a. A research team records the rainfall in inches per day in an area of the rain forest. The square footage of vegetation and plant density per square foot are also measured.

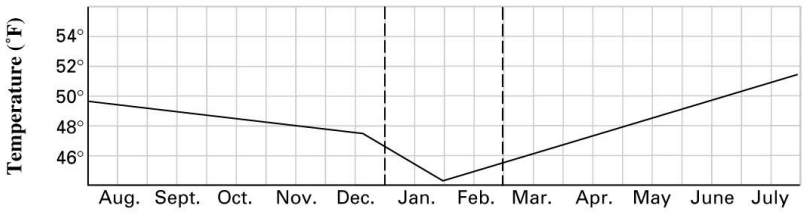
   _____ b. The intensity, duration, and time of day of the precipitation are noted for each precipitation episode. The types of vegetation in the area are recorded and classified.

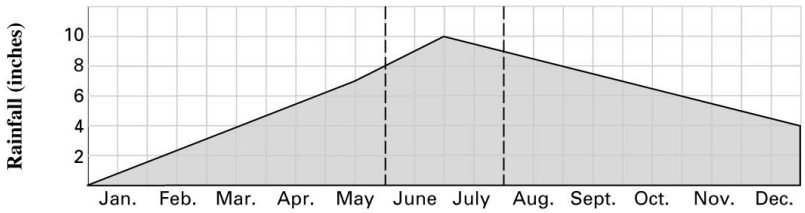
   _____ c. The information gathered is compared with the data on the average precipitation and the plant population collected over the last 10 years.

   _____ d. The information gathered by the research team indicates that rainfall has decreased significantly. They propose that deforestation is the primary cause of this phenomenon.

2. "When 10.0 g of a white, crystalline sugar are dissolved in 100. mL of water, the solution is observed to freeze at –0.54°C, not 0.0°C. The system is denser than pure water." Which parts of these statements represent quantitative information, and which parts represent qualitative information?

3. List the different variables are represented in these two graphs.





4. Match the description on the right to the most appropriate quantity on the left.

_____	$2\ m^3$	(a)	mass of a small paper clip
_____	0.5 g	(b)	length of a small paper clip
_____	0.5 kg	(c)	length of a stretch limousine
_____	$600\ cm^2$	(d)	volume of a refrigerator compartment
_____	20 mm	(e)	surface area of a sheet of paper
		(f)	mass of a jar of peanut butter

5. Round the following measurements to three significant figures.
   a. 22.77 g
   b. 14.62 m
   c. 9.3052 L
   d. 87.55 cm
   e. 30.25 g

6. Complete the following conversions *(Skip a line between each and show correct work!)*
   a. 100 mL = _____ L
   b. 0.25 g = _____ cg
   c. 400 cm^3 = _____ L
   d. 400 cm^3 = _____ m^3

7. Three students were asked to determine the volume of a liquid by a method of their choosing. Each performed three trials. The table below shows the results. The actual volume of the liquid is 24.8 mL.

	Trial 1 (mL)	**Trial 2 (mL)**	**Trial 3 (mL)**
Student A	24.8	24.8	24.4
Student B	24.2	24.3	24.3
Student C	24.6	24.8	25.0

   a. Considering the average of all three trials, which student's measurements show the greatest accuracy?

   b. Which student's measurements show the greatest precision?

8. Use the data below to answer the following questions:

Solids	**Density at 20°C (g/cm^3)**	**Liquids**	**Density at 20°C (g/mL)**
Cork	0.24*	gasoline	0.67*
Butter	0.86	alcohol, ethyl	0.791
Ice	0.92†	kerosene	0.82
Sucrose	1.59	turpentine	0.87
Bone	1.85*	water	0.998
Diamond	3.26*	sea water	1.025**
Copper	8.92	milk	1.031*
Lead	11.35	mercury	13.6

† measured at 0°C
** measured at 15°C
* typical density

   a. If ice were denser than liquid water at 0°C, would it float or sink in water?

   b. Water and kerosene do not dissolve readily in one another. If the two are mixed, they quickly separate into layers. Which liquid floats on top?

   c. The other liquids in that do not dissolve in water are gasoline, turpentine, and mercury. Which of these liquids would settle to the bottom when mixed with water?

9. Aluminum has a density of 2.70 g/cm^3. What would be the mass of a sample whose volume is 10.0 cm^3?

10. A certain piece of copper wire is determined to have a mass of 2.00 g per meter. How many centimeters of the wire would be needed to provide 0.28 g of copper?

11. A roll of transparent tape has 66 m of tape on it. If an average of 5.0 cm of tape is needed each time the tape is used, how many uses can you get from a case of tape containing 24 rolls? *(32 000 uses)*

12. Gasoline has a density of 0.73 g/cm^3. How many liters of gasoline would be required to increase the mass of an automobile from 1271 kg to 1305 kg? *(47 L)*

Graphing Review

You can print this sheet, or answer the following on NOTEBOOK PAPER and GRAPH PAPER.

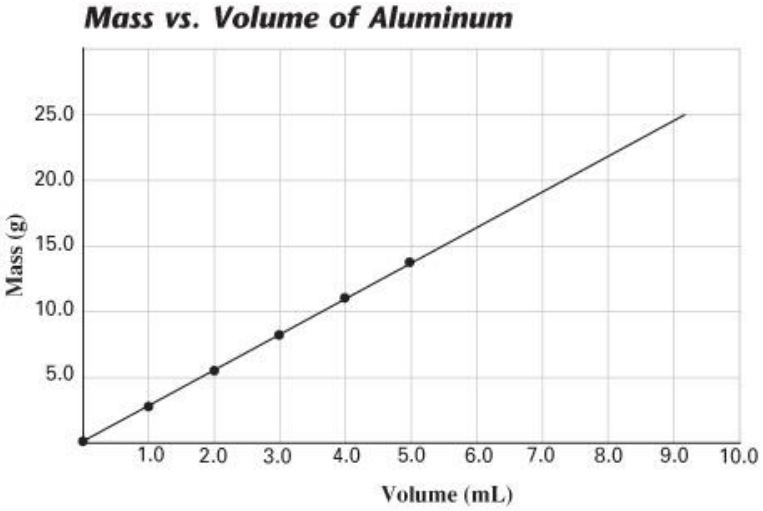
13. Use the graph of the density of aluminum below to determine the approximate mass of aluminum samples with the following volumes.

_____ a. 8.0 mL

_____ b. 1.50 mL

_____ c. 7.25 mL

_____ d. 3.50 mL



14. What type of relationship is represented in the graph above? _____

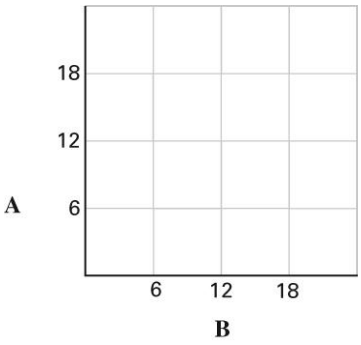
15. What is the shape of the graph? _____

16. What equation fits the relationship shown by the data? _____

17. What is the value of *k*?

18. The following data are given for two variables, A and B. In the graph provided, plot the data.

A	B
18	2
9	4
6	6
3	12



19. What type of relationship is represented in the graph above? _____

20. What is the shape of the graph? _____

21. What equation fits the relationship shown by the data? _____

22. What is the value of *k*?