

## Chapter 2 Sample Test & Review Worksheet – Part 1

**EITHER print this sheet and answer the following questions on the sheet OR answer the following on notebook paper. If you use notebook paper, number each question with the same numbers below. Skip lines between each question. You do not have to write the questions.**

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

- \_\_\_\_\_ 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 information gathered is compared with the data on the average precipitation and the plant population collected over the last 10 years.
- \_\_\_\_\_ c. 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  $-0.54^{\circ}\text{C}$ , not  $0.0^{\circ}\text{C}$ . The system is denser than pure water." Which parts of these statements represent quantitative information, and which parts represent qualitative information?

Qualitative:

Quantitative:

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

- |                         |  |
|-------------------------|--|
| _____ $2\text{ m}^3$    | (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        |
| _____ $600\text{ cm}^2$ | (d) volume of a refrigerator compartment |
| _____ 20 mm             | (e) surface area of a sheet of paper     |
|                         | (f) mass of a jar of peanut butter       |

4. Round the following measurements to three significant figures.

- |                   |                   |
|-------------------|-------------------|
| a. 22.77 g _____  | d. 87.55 cm _____ |
| b. 14.62 m _____  | e. 30.25 g _____  |
| c. 9.3052 L _____ |                   |

5. 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. For each student, calculate the average of each of their trials.

|           | Trial 1<br>(mL) | Trial 2<br>(mL) | Trial 3<br>(mL) | Average<br>(mL) |
|-----------|-----------------|-----------------|-----------------|-----------------|
| Student A | 24.9            | 24.8            | 24.2            |                 |
| Student B | 24.2            | 24.3            | 24.3            |                 |
| Student C | 23.9            | 24.5            | 26.1            |                 |

- a. The actual volume of the liquid is 24.8 mL. Considering the average of all three trials, which student's measurements show the greatest accuracy and why?
- b. Which student's measurements show the greatest precision and why?

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

| Solids  | Density at 20°C (g/cm <sup>3</sup> ) | Liquids    | Density at 20°C (g/mL) |
|---------|--------------------------------------|------------|------------------------|
| Ice     | 0.92 <sup>†</sup>                    | 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                   |

<sup>†</sup> measured at 0°C

\*\* measured at 15°C

- a. If ice was more dense 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 turpentine, and mercury. Which of these liquids would settle to the bottom when mixed with water?
7. Convert 100 mL to liters. (0.1 L)
8. Convert 0.250 g to centigrams. (0.00250 cg)
9. How many cubic centimeters are in 450 L? ( $4.5 \times 10^5 \text{ cm}^3$ )
10. Convert 700. cm<sup>3</sup> to cubic meters. ( $7.00 \times 10^{-4} \text{ m}^3$ )

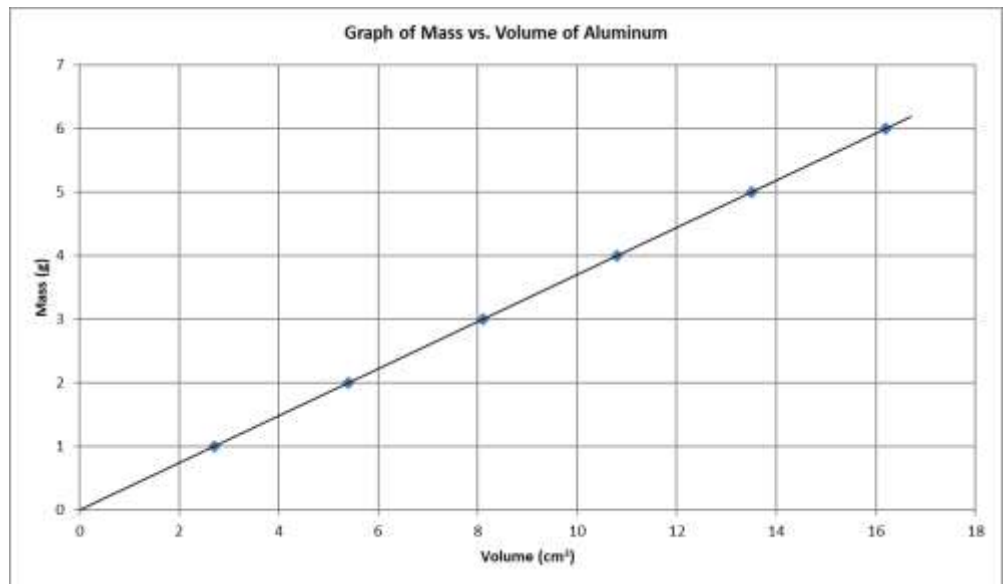
11. Aluminum has a density of  $2.70 \text{ g/cm}^3$ . What would be the mass of a sample whose volume is  $10.00 \text{ cm}^3$ ? (*27.0 g*)
12. A certain piece of copper wire is determined to have a mass of  $2.00 \text{ g}$  for every meter of wire. How many centimeters of the wire would be needed to provide  $0.28 \text{ g}$  of copper? (*14 cm*)
13. A roll of purple ribbon has  $66.00 \text{ m}$  of ribbon on it. If an average of  $5.00 \text{ cm}$  of ribbon is needed each time the ribbon is used, how many uses can you get from  $2.5$  cases of ribbon containing when there are  $24$  rolls in a case? ( *$7.9 \times 10^4$  uses*)
14. Gasoline has a density of  $0.73 \text{ g/cm}^3$ . How many liters of gasoline would be required to increase the mass of an automobile from  $1271 \text{ kg}$  to  $1305 \text{ kg}$ ? (*47 L*)

## Part 2 - Graphing Review

You can print this sheet and answer below OR answer on NOTEBOOK PAPER and GRAPH PAPER.

15. Use the graph below to determine the approximate mass or volume of aluminum samples with the following.

- \_\_\_\_\_ a.  $8 \text{ cm}^3$
- \_\_\_\_\_ b.  $1.50 \text{ g}$
- \_\_\_\_\_ c.  $18 \text{ cm}^3$
- \_\_\_\_\_ d.  $4.8 \text{ g}$



16. What type of relationship is represented in the graph above? \_\_\_\_\_

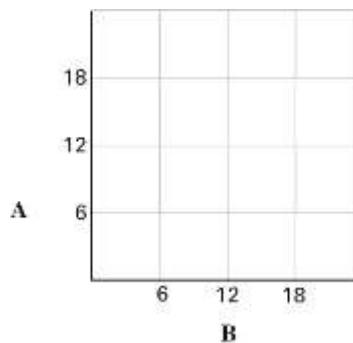
17. What is the shape of the graph? \_\_\_\_\_

18. What equation fits the relationship shown by the data? \_\_\_\_\_

19. What is the value of  $k$ ?

20. The following data are given for two variables, A and B. In the graph provided, plot the data. *(If you are using notebook paper, you must draw the graph.)*

| A  | B  |
|----|----|
| 18 | 2  |
| 9  | 4  |
| 6  | 6  |
| 3  | 12 |



21. What type of relationship is represented in the graph above? \_\_\_\_\_

22. What is the shape of the graph? \_\_\_\_\_

23. What equation fits the relationship shown by the data? \_\_\_\_\_

24. What is the value of  $k$ ?