

CHAPTER 1 PRACTICE QUESTIONS

Directions: Review what you just learned in this chapter and test your comprehension with these practice questions. Answers can be found directly after the questions.

Scientific Method

- Which of the following terms describes a testable explanation for an observation?
 - Theory
 - Hypothesis
 - Data
 - Conclusion

Lab Safety and Equipment

- What is the very **first** thing you should do prior to beginning any chemistry experiment?
 - Eat a snack in the laboratory to avoid being hungry while you are performing the experiment.
 - Retrieve all of the chemicals that you will need from the lab cart or stock room.
 - Put on any necessary PPE, including goggles.
 - Read through the entire laboratory procedure and ask your teacher for clarification regarding any step that is not entirely clear.

- Which of the following pieces of equipment is the most precise tool to measure 52.5 mL of a liquid (and why)?
 - A beaker, because it can be cleaned easily when the experiment is finished
 - An Erlenmeyer flask, because it is more stable for mixing a solution than a beaker
 - A graduated cylinder, because it is calibrated to measure to that level of precision
 - A 50 mL pipet, because it is okay to estimate the remaining 2.5 mL of liquid above the fill mark
- What is the function of a volumetric flask?
 - To hold and support glassware during an experiment
 - To transfer solid chemicals from the original container to a weigh boat
 - To measure the temperature of a chemical during an experiment
 - To contain a specified volume of liquid such that a desired concentration of a solution can be made

Units of Measurement and Significant Figures

5. Temperature is measured using a _____ and is expressed in SI units of _____.
- A) balance; grams (g)
 - B) thermometer; degrees Celsius ($^{\circ}\text{C}$)
 - C) thermometer; Kelvins (K)
 - D) buret; liters (L)
6. Which of the following units of mass is larger than a gram?
- A) Kilogram
 - B) Nanogram
 - C) Milligram
 - D) Centigram
7. Convert 530 kilograms to milligrams. Express your answer in scientific notation.

For questions 8–9: Complete the following calculations and round your answers to the correct number of significant figures. Make sure you include the correct units with your answer!

8. A sample of a fuel is found to be 1.709 g and fills a graduated cylinder to the 2.50 mL mark. What is the density of the fuel?
9. During your chemistry lab, three lab groups experimentally generated varying amounts of aluminum: 2.51 g, 4.392 g, and 3.0 g. What was the total amount of aluminum generated for the class?