Chemistry I

Worksheet 1-3 Name_____

Density Period_____

Glencoe Chemistry pp.27-29, 43-45, 56-57

Show your work, include units, and circle your final answer to receive credit.

1. Explain why the mass of an object cannot help you identify what material the object is made from but the density of the object can be used to identify the material.

2. Identify the following as an intensive or extensive physical property.
   a. melting point _____
   b. density _____
   c. length _____

3. Circle the following unit(s) that could be used for density.

   g/mL L/g kg/cm^3 mL/cm^3 g/cm^3

4. In a glass of ice water, the ice cubes are on top of the water. What can you say about the density of solid water in relation to the density of liquid water?

5. A rock has a mass of 127 g and displaces 32.1 mL of water. What is the density of the rock?

6. A weather balloon is inflated to a volume of 2.2 x 10^3 L with 37.4 g of helium gas. What is the density of helium?

7. The density of gold is 19.32 g/mL. A shiny, gold-colored bar of metal weighs 57.3 g and has a volume of 4.7 cm^3. Is the metal bar pure gold?

8. The density of aluminum is 2.7 g/mL. What is the volume of 8.1 grams?

9. You have 250 mL of ethanol that has a density of 0.78 g/cm^3. What is the mass of the liquid?

10. A plastic ball with a volume of 19.7 cm^3 has a mass of 15.8 g. Would this ball float or sink in a container of gasoline with a density of 0.737 g/cm^3?

11. Three balloons are each filled with a different gas: hydrogen (0.0899 g/L), carbon dioxide (1.977 g/L), and helium (0.1785 g/L). The balloons are released into the air. Which balloon will float the highest in the air (1.29 g/L)?