Name Worksheet 1

Chemistry 121-Worksheet 1

Answer the following questions with the information in Handout 1 and the video for Handout 1A and B.

Part 1

1. A homogeneous mixture is also called a Solution.

2. Correctly identify the following as an element, a compound, or a mixture.

   a. A deicing agent (calcium chloride) compound
   b. A gold bar element
   c. Glucose compound
   d. Laughing gas (nitrous oxide) compound
   e. A bar of soap mixture
   f. Gasoline mixture

3. Which one of the following would be a physical property of glucose?

   a. It is used by the body to generate energy.
   b. When combined with sulfuric acid it forms carbon.
   c. In its pure form, it is a white powder.
   d. It can be fermented to form ethanol.

4. Classify the following processes as chemical or physical changes.
   a. A white powder is added to water. Some of the powder sinks to the bottom of the container, some rises to the top. The separation of the powder mixture is an example of: physical changes

   b. Magnesium metal, a gray solid, is heated in a crucible in the presence of oxygen. A white powder is collected from the crucible. This is process is an example of:

      chemical changes

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Part 2

1. The accepted value for the density of iron is 7.9 g/mL. Which of the following sets of data for the density of iron is more accurate? Which is more precise?
   a. Group 1: 7.98 g/mL, 7.85 g/mL
   b. Group 2: 7.65 g/mL, 7.64 g/mL
   c. Group 3: 7.03 g/mL, 8.54 g/mL
   d. Group 4: 5.43g/mL, 5.47 g/mL
2. How many sig figs are in the value of 30 dozen? 1 sig fig
3. The number 0.01060 has 4 significant figures.
4. The number 4040 has 3 significant figures.
5. The number 8.07×10^{-3} has 3 significant figures.

REMINDERS:
A. Do not round as you go!
B. Multiplication/division has a different set of rules than addition/subtraction.

6. A beaker of water has an initial mass of 353.2 g. After it has been left uncovered for several days, some of the water has evaporated. The new mass of the beaker is found to be 320.55 g using a more precise balance. Report the mass of the evaporated water using the correct number of significant figures.

   32.6 g

7. A cup of hot soup is initially at 75.4 °C, then cools by 23 °C over a period of 25 minutes. Which of the following expresses the new temperature of the soup after 25 minutes using the correct number of significant figures?

   52 C

8. 0.02 cm x 2.371 cm = 0.05 cm

9. 3.42 + 45.96/0.21 = 220