Chem 130: Chemistry for Funeral Services
Problem Set 1: Due Tuesday, 1/24/06

Name: _____ Date: _____

Each question is worth one point. Show your work wherever calculations are required.

1. Distinguish between a physical and a chemical property. Give an example of each.

2. Why is it important to put temperature in degrees Kelvin before doing calculations of properties associated with temperature?

3. Fill in the following chart and answer the question:

   1000 mg = _____ g

   3.1 L = _____ mL

   Which is bigger, 61 m or 0.061 km? Explain

4. What is vapor pressure? Why might it be important to know about vapor pressure when working with embalming fluids?

5. You want to find the density of a metal. The cylinder and the water shows 40 mL. When the metal is added, the water level goes up to 74 ml. The metal has a mass of 268 g. What is its density? (HINT: draw a picture of the experiment and think about what the changes in water level mean.)

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6. The pressure on 500 ml of a gas changes from 1.5 atm to 3.5 atm. What is the final volume? The temperature is kept constant throughout. (HINT: draw a picture of the experiment and think about what the change in pressure will do to the gas.)

7. Give two characteristics of liquids that are different from gases. How are the characteristics explained by the atomic theory of matter?

8. How are elements different from mixtures?

9. Give a common example of Charles' Law or Boyle's Law and explain how it illustrates the law.

10. Explain the difference between an endothermic reaction and an exothermic reaction. For each, what happens to the reaction? What happens to the surroundings? Give an example.