Homework #1

You must show your entire work on a separate sheet(s) of paper to get full credit.  
Chapter 1 & 2

1. A scientist who is trying to make an insecticide that is more toxic to mosquitoes than to humans would be involved in what?  
   a. basic research  
   b. applied research  
   c. technology  
   d. serendipity

2. Identify each of the following outdoor activities as a physical or chemical change?  
   a. Raking leaves  
   b. Burning leaves  
   c. Starting a lawn mower  
   d. Mowing the lawn  
   e. Digging a garden  
   f. Growing a garden

3. Is it possible that scientists in other branches of biological and physical sciences might also study DNA? If so, explain what they might be looking for.

4. Name two elements that are solids, two that liquids, and two that are gases.

5. Write the symbols for the six elements you named in question 4.

6. Name four kinds of energy.

7. Is it possible to have a mixture of two elements and also to have a compound of the same two elements? Explain. Can you think of an example?

8. Is the tea in tea bags a pure substance? Use the process of making tea to make an argument for your answer. How would your argument apply to instant tea?

9. a. How many milligrams are there in 1 gram?  
    b. How many meters are there in 1 kilometer?  
    c. How many centigrams are there in 1 gram?

10. Which of the following quantities is a density? (hint check your units!)  
    a. 9 cal/g  
    b. 100 cm/m  
    c. 1.5 g/ml  
    d. 454 g/lb

11. A computer has 60 gigabyte hard drive. How many bytes is this?

12. Complete the following:  
    a. 4 cm = ? m  
    b. 328 ml = ? L  
    c. 0.98 kg = ? g  
    d. 0.043 g = ? mg