

**NAME:**

**HOMEWORK 1-1  
DENSITY WORKSHEET**

Write in equations and show all work. Answer questions in complete sentences.

1. An object has a mass of 46.5 g and a volume of 55.0 ml. What is its density?
2. An object's mass is determined to be 32.5g. When the object is placed in a graduated cylinder containing 175ml of water, the water in the cylinder rises to a level of 187.5ml. What is the density of the material?
3. You have a substance with a length = 2, width = 3, and a height = 4. Its density is known to be 0.5 grams per cubic centimeter. What is the mass of the sample you have?
4. If you have a sample of a pure uniform substance with a density of 8 g/ml and a volume of 10 ml and you cut it exactly in half, what is the density of each half? What is the volume of each half?
5. The density of substance is equal to 2.5 g/ml. If you have a pure sample of this substance with a mass of 13g, how much space does this object take up?
6. What happens to the density of an object if:
  - a) Mass remains constant and volume decreases?
  - b) Volume remains constant and mass decreases?

7. As the Temperature of a gas increases, explain what happens to its density and why?

8. Explain what convection is and draw a diagram displaying it.

9. As pressure on a gas increases explain what happens to its density and why.

10. You have a sample with a volume of 55.7ml and a mass of 67.9g. Will this sample float in water? Why or why not?

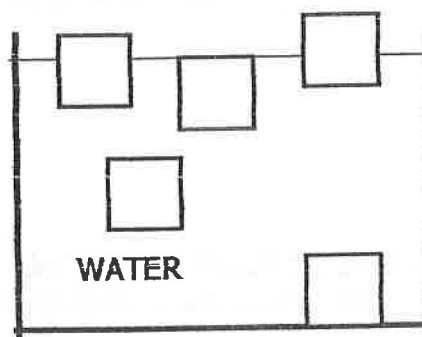
11. Using the information given in the diagram, match the densities listed on the right with the samples on the left.

Samples

A:  
B:  
C:  
D:  
E:

Density

1.5 g/ml  
0.9 g/ml  
0.1 g/ml  
1.0 g/ml  
0.5 g/ml



12. A sample of a pure substance with a density of 3.0g/ml is separated into two pieces. One piece has a mass of 50g and the other has a mass of 25g. What is the density of the larger piece? What is the volume of the smaller one?