DETERMINING THE DENSITY OF LIQUIDS

PROBLEM: You will be working with four different liquids, water, oil, alcohol, and salt water. Predict their relative densities, going from least dense to most dense.

HYPOTHESIS: Least Dense⟹ 1. _____

2. _____

3. _____

Most Dense⟹ 4. _____

EXPERIMENT:

_____ 1. Place the empty graduated cylinder on the TBB. Record its mass in the data table.

_____ 2. Pour 50 mL of distilled water into the graduated cylinder. Find the mass of the cylinder + water. Record this mass in the data table.

_____ 3. Calculate the mass of the water. Record this answer in the data table.

_____ 4. Calculate the density of the water, and record the answer in the data table.

_____ 5. Repeat steps 1-4 for the other liquids. (Use the already prepared. cylinders for the oil to avoid a mess!)

OBSERVATIONS:

Liquid	Mass of Empty Graduate (g)	Mass of Graduate + Liquid (g)	Mass of Liquid (g)	Volume of Liquid (mL)	Density of Liquid (g/mL)
Water					
Oil					
Alcohol					
Salt Water					

CONCLUSIONS:

1. List the liquids in order of increasing density.

   Least Dense ⟹ 1. _____

   2. _____

   3. _____

   Most Dense ⟹ 4. _____

2. Was your hypothesis correct? _____ Explain your reasoning for your original hypothesis and what you think about the densities of the liquids now.

   _____

   _____

   _____

   _____

   _____

3. Which has a greater mass, 1 L of water or 1 L of alcohol? Why?

   _____

   _____

   _____

4. Which takes up a greater volume, 1000 g of water or 1000 g of alcohol? Why?

   _____

   _____

   _____

5. Which is more dense, 1 mL of water or 50 L of water? Why?

   _____

   _____

   _____

6. Predict what would happen if all of the liquids used in this lab were poured into one test tube.

   _____

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