Names: _____ **20 Pts.**

Chemistry Lab: Density

I. Determine the density of **2 of the 4** metal blocks. Measure the mass with a balance and then the three dimensions with a cm ruler. Remember units and sig figs!!!

Substance	Mass	Volume		Density (w/ calc.)	Theoretical Density	Percent error
Aluminum					2.70 g/cm^3	
Brass					8.44 g/cm^3	
Lead					11.3 g/cm^3	
Steel					7.82 g/cm^3	

II. Determine the density of **3 of the 4** cylinders. Measure the mass with a balance and the volume by water displacement in a graduated cylinder. Remember units and sig figs!!!

Substance	Mass	Volume	Density (w/ calc.)	Theoretical Density	Percent error
Aluminum				2.70 g/cm^3	
Tin				7.31 g/cm^3	
zinc				7.14 g/cm^3	

III. Determine the density of liquids. Using a 10-mL graduated cylinder find the volume and mass of water and rubbing alcohol. Remember Units and Sig Figs.

Substance	Mass	Volume	Density	Theoretical D	Percent error
Water					
Isopropyl alcohol				0.789 g/cm^3	

IV. Conclusion Questions:

1.) What volume of Al is needed to equal the mass of 50.0 mL of lead?

2.) Which has the greater volume. (If they are the same write "equal")

a.) _____ 1 mL of Pb or 1 mL of Al?

b.) _____ 1 gram Pb or 1 gram Al?

c.) _____ 1 gram of water or 1 mL of water?

3.) Which has the greater density. (If they are the same write "equal")

a.) _____ 10 grams water or 100 grams of water?

b.) _____ A and B have the same volume but B's mass is ½ of A's mass?

c.) _____ X and Y have the same mass but X's volume is ½ of Y's volume?

4.) Which has the greater mass. (If they are the same write "equal")

a.) _____ 1.0Liter of air or 1.0 Liter of helium?

b.) _____ 10 mL of gold or 10 mL of aluminum?

c.) _____ 100 grams of lead or 100 grams of water?