Chemistry 30A **Experiment 1**

Lab Instructor:_____ Name:_____

DATA

Part 1 1. Unknown number of metal			
2. Mass of metal			
3. Mass of your metal from posted list			
Part 2 4. Dimensions of metal:	Length:	Width:	Height:
Part 3 5. Volume of water in cylinder			
6. Volume of water plus metal			
7. Volume of metal by water displacement			
Part 5 8. Mass of empty 10-mL graduated cylinder			
9. Volume of water in graduated cylinder			
10. Mass of cylinder plus water			
11. Mass of water in the graduated cylinder			
Part 6 12. Unknown number of new piece of metal			
13. Mass of new piece of metal			
14. Volume of water in cylinder			
15. Volume of water plus metal			
16. Volume of metal by water displacement			
Part 7 17. Record the first type of household measuring device used and its volume in mL.			
18. Record the second type of household measuring device used and its volume in mL.			
19. Record the third type of household measuring device used and its volume in mL.			

CALCULATIONS (Show all calculation setups, including units)

Show work here	Answer
Part 2 20. Volume of metal from linear dimensions	
Part 3 21. Compare the volume of the metal from linear dimensions with the volume obtained by displacement of water. Which do you trust more? Why?	
Part 4 22. Density of metal (using volume obtained from linear measurements)	
23. Density of metal (using volume obtained by displacement of water)	
Part 5 24. Density of water	
25. Percent error in measured density of water	

Part 6 26. Calculate the predicted volume of the new piece of metal from its mass and the density you obtained above.	
27. Compare the predicted volume of metal to the volume obtained by displacement of water. How do they compare?	
28. Calculate the percent difference between the two volumes.	

Questions (Always show your work)

1. An empty graduated cylinder weighs 71.360 g. When it is filled to 50.0 mL with an unknown liquid it weighs 110.810 g. What is the density of the unknown liquid?

2. An unknown rectangular metal sample measures 1.2 cm by 6.5 cm by 2.4 cm. The mass of this piece of metal is 84.43 g. Calculate the density of this metal sample.