Math Assignment 1: 1/16/14
Created by Dr. Steve Kioko
Answer the following questions as best you can. You will be quizzed on the material contained in the assignment. Please print out and bring the assignment with you to class next week.

Using a reliable resource find and state the definitions for the following:

1. Molarity
2. Normality (as defined in chemistry)
3. Molecular weight
4. Percentage concentration (e.g. how would you describe a 2% solution of Sodium Chloride)

Calculations

1. Use the metric system to convert the following: e.g. 1 cm = 10 mm = 10^{-2} m

0.5 ml = _____μl

1 L = _____mL =_____μL =_____nL=_____ρL (use scientific notation)

1 kg = _____mg =_____μg

1 μL = _____ mL = _____ L (use scientific notation)

2. Describe how you would prepare a 1M solution of Sodium Hydroxide (NaOH MW= 40 g mol^{-1})

3. You have a very concentrated solution of Sodium Chloride (NaCl) that you have to prepare. You need 5% NaCl solution. Describe how you would go about preparing this solution so that you have a final volume of 1L of 5% NaCl.

4. Arrange the following organelles from smallest to biggest in terms of size. Write down the approximate size (surface area or diameter) of each organelle

Nucleus, Ribosome, lysosome, cell membrane, mitochondria, microtubule