General Chemistry
Mr. MacGillivray
Worksheet: Molarity Calculations

1. What is meant by "concentration" when we are talking about solutions? What is molarity? Which is more concentrated, 1 liter of an 0.500 M solution or 1 mL of an 0.500 M solution? Why?

2. Calculate the molarity of a solution which has a volume of 2.00 L and which contains 0.300 mol of dissolved solute.

3. Calculate the molarity of 3.59 L of a solution in which 0.250 mol of NaCl has been dissolved.

4. Calculate the molarity of 0.833 L of a solution in which 35.3 g of table sugar has been dissolved. The formula for table sugar (sucrose) is $C_{12}H_{22}O_{11}$.

5. A scientist needs 569 ml of an 0.250 M solution of barium chloride ($BaCl_2$).
    a. How many moles of barium chloride should she use to make the solution?
    b. How many grams of barium chloride should she use to make the solution?

6. A solution of magnesium nitrate ($Mg(NO_3)_2$) is needed for a lab experiment. The solution must have a concentration of 0.300 M. If the student who is making the solution has only 45.0 g of magnesium nitrate, what is the maximum volume of solution that the student can make? (If the student dissolves all of the $Mg(NO_3)_2$, how many liters of solution can be made?)