NSM 12C PAL Worksheet Introduction to Molarity Name: _____

Review: Write the molecular equation and NIE for the following. Classify each compound as **SE** = strong electrolyte, **WE** = weak electrolyte, **M** = molecular, or **P** = precipitate, under the molecular equation.

1. Solutions of calcium hydroxide with perchloric acid are mixed.

   Molecular Equation:

   Classification:

   Total NIE (*optional*):

   NIE:

2. Solid antimony (IV) carbonate reacts with sulfuric acid.

   Molecular Equation:

   Classification:

   Total NIE (*optional*):

   NIE:

Molarity

1. What units are used in molarity?

2. Determine the molarity of a solution formed by dissolving 468 mg of magnesium iodide in enough water to yield 50.0 mL of solution.

3. What volume of a 0.540 M NaOH solution contains 11.5 g of sodium hydroxide?

4. What is the concentration of nitrate ions in a 0.125 M magnesium nitrate solution?

5. How many oxygen atoms are in 86.753 mL of a 0.9 M sulfuric acid solution?

6. Lisselle added a 15.0 mL aliquot of a 0.325 M HCl solution to a 250.0 mL volumetric flask, to which she proceeded to fill the rest of the flask to the calibration mark with water. What is the new molarity of the HCl solution? How much water did she add to the flask?

7. Dr. Mack prepared a solution by dissolving 10.0 g of potassium hydroxide in enough water to make 150.0 mL of solution. He then took 15.0 mL of the stock solution and diluted it with enough water to make 65.0 mL of a final solution. What is the concentration of KOH for the final solution?

Something to think about… *Is the initial solution or final solution of potassium hydroxide more basic? Why?*

Extra NIE Practice!
Write the NIE for the reactions below:

1. Nitric acid and aqueous ammonia are mixed.

2. A solution of potassium fluoride reacts with hydrobromic acid.