Name _____   **AP Chem**   ___/___/___

Chapter 4 Homework #1

In a few minutes I will add 20.0 mL of 0.50 M lead(II) nitrate to 15.0 mL of 1.0 M sodium iodide.

1. What is the formula of the precipitate?
2. What substance is the limiting reagent?
3. What mass of precipitate formed?
4. Determine the concentration of each ion remaining in solution.

Molarity Practice - Solve each of the following without using a calculator.

1. How many moles of solid $Ba(NO_3)_2$ should be added to 400. mL of 0.20 molar $Fe(NO_3)_3$ to increase the concentration of the NO_3^- ion to 1.0 molar? (Assume that the volume of the solution remains constant.)

2. When 70. milliliters of 3.0-molar Na_2CO_3 is added to 30. milliliters of 1.0-molar $NaHCO_3$ the resulting concentration of Na^+ is:

3. The weight of H_2SO_4 (molecular weight 98.1) in 250.0 milliliters of a 6.00 molar solution is:

4. When 140. mL of 3.0-molar Na_2CO_3 is added to 30. milliliters of 1.0-molar $NaHCO_3$ the resulting concentration of Na^+ is:

5. The weight of H_2SO_4 (molecular weight 98.1) in 50.0 milliliters of a 6.00 molar solution is:

6. What is the final concentration of barium ions, $[Ba^{2+}]$, in solution when 100. mL of 0.10 M $BaCl_2(aq)$ is mixed with 100. mL of 0.050 M $H_2SO_4(aq)$?

7. How many moles of solid $Ba(NO_3)_2$ should be added to 300. mL of 0.20 molar $Fe(NO_3)_3$ to increase the concentration of the NO_3^- ion to 1.0 molar? (Assume that the volume of the solution remains constant.)

8. How many moles of solid $Ba(NO_3)_2$ should be added to 700. mL of 0.20 molar $Fe(NO_3)_3$ to increase the concentration of the NO_3^- ion to 0.80 molar? (Assume that the volume of the solution remains constant.)

9. When 90. milliliters of 3.0-molar Na_2CO_3 is added to 40. milliliters of 1.0-molar $NaHCO_3$ the resulting concentration of Na^+ is:

10. The weight of H_2SO_4 (molecular weight 98.1) in 150.0 milliliters of a 3.00 molar solution is: