AP Solution Stoichiometry (Due Mon!) Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

For each of the following; write out the complete balanced equation, full ionic equation, and net ionic equation for the reaction and calculate the concentration of the unknown solution.

1. ***27.4 mL of 0.150 M hydrochloric acid is required to neutralize 30.0 mL of a potassium hydroxide solution of unknown concentration.***

Equations:

 Unknown Concentration:

1. ***33.5 mL of 0.200 M sodium hydroxide is required to neutralize 22.5 mL of a sulfuric acid solution of unknown concentration.***

Equations:

 Unknown Concentration:

For each of the following; write out the complete balanced equation, full ionic equation, and net ionic equation for the reaction and calculate the molarity, mass, or volume of reagent/product depending on the question.

1. ***29.8 g of ammonia gas needs to be completely reacted by a 0.250M sulfuric acid solution.***

Equations:

How much (mL) 0.250 M sulfuric acid solution would be required?

1. ***51.5mL of 0.50M nitric acid was required to completely react a spill of crystalline strontium hydroxide.***

Equations:

How much did the sample of strontium hydroxide weigh?

1. ***95mL of a 0.24M silver nitrate is required to completely react 80mL of sodium iodide.***

Equations:

What was the concentration of the sodium iodide solution?

1. What characteristic did problems 1-5 all have in common? (ie: what type of problem do they represent?)
2. ***8.4g of magnesium acetate is combined with 7.31g of potassium hydroxide in water, creating a final volume solution of 250 mL.***

Equations:

How much precipitate would be produced?

What would be the concentration of the aqueous product?

How many more grams of either reactant (determine the right one) must be added so that each is completely reacted?

1. ***55.4mL of a 0.38M potassium hydroxide solution is mixed with 76.0mL of a 0.29M hydrochloric acid solution.***

Equations:

Determine the mL of water produced.

Determine the grams of salt produced.

Calculate the concentration of excess acidic/basic ion (H+/OH-).

How many additional mL of either reactant (determine the right one) would be required to neutralize the solution?

1. How were questions 7 & 8 different from questions 1-5? (ie: what type of problem do they represent?)