Name: _____
No.: _____

% Yield and Limiting Reactants Review

***Remember to use correct significant figures!

1.) Sulfuric Acid reacts with aluminum hydroxide by double displacement. If 30.0g of sulfuric acid react with 25.0g of aluminum hydroxide, identify the limiting reactant. ans. sulfuric acid is L.R.

2.) The actual amount of product in a reaction is 39.7g although a mass-mass calculation predicted 65.6g. What is the percentage yield of this product? ans. 60.5%

3.) Metallic magnesium reacts with steam to produce magnesium hydroxide and hydrogen gas. If 16.2g of magnesium are combined with 12.0g of water, what is the limiting reactant?. ans. Water is L.R.

4.) If 35.0g of phosphoric acid react with 65.0g of barium chloride by double displacement, what is the limiting reactant? ans. barium chloride is L.R.

5.) What is the percent yield in the following reaction if 5.50 grams of hydrogen react with nitrogen to form 20.4 grams of ammonia? ans. 65.4 % ammonia

$N_2 + 3H_2 \rightarrow 2NH_3$

6.) If 2.50 moles of copper and 5.50 moles of silver nitrate are available to react by single replacement, identify the limiting reactant. ans. Cu is L.R.

7.) Chromium (III) hydroxide solution will dissolve in concentrated sodium hydroxide solution according to the following equation:

$$NaOH + Cr(OH)_3 \rightarrow NaCr(OH)_4$$

This process is one steps in making high purity chromium chemicals. If you begin with 66.0g $Cr(OH)_3$ and obtain 38.4g of $NaCr(OH)_4$, what is your percent yield? ans. 41.9%

8.) Aluminum reacts with sulfur to produce aluminum sulfide. If you have 15.00g of Aluminum and 20.0g of sulfur, which is the limiting reagent? ans. sulfur is L.R.

9.) A calculation indicates that 82.8g of a product should be obtained from a certain reaction. If a chemist actually gets 30.7g, what is the percent yield? ans. 37.1 %

10.) Iron (III) hydroxide reacts with sulfuric acid. If you have 4.0 moles of iron (III) hydroxide and 6.5 moles of sulfuric acid, which is the limiting reactant? ans. sulfuric acid is L.R.