Name Period Date

**Limiting Reactants & Percent Yield – Ch. 12**

1. Identify the limiting and excess reagents when 25 L of nitrogen reacts with 25 L of hydrogen at STP. How many liters of ammonia gas are formed in this reaction?

\_\_\_\_ N2 + \_\_\_\_ H2 → \_\_\_\_ NH3

1. 50.0 mL of 2.00*M* H­2SO4 react with 75.0 mL of 2.00*M* NaOH. Identify the limiting and excess reactants. How many grams of Na2SO4 will be formed?

\_\_\_\_ H2SO4 + \_\_\_\_ NaOH → \_\_\_\_ Na2SO4 + \_\_\_\_ H2O

1. If 6.57 g of iron are reacted with an excess of hydrochloric acid, HCl, then hydrogen gas and 14.63 g of iron(III) chloride are obtained. Calculate the theoretical yield and percent yield of FeCl­3.

\_\_\_\_ Fe + \_\_\_\_ HCl → \_\_\_\_ H2 + \_\_\_\_ FeCl3

1. A chemist burns 160. g of aluminum in oxygen to produce aluminum oxide. She produces 260. g of aluminum oxide. Write a balanced equation and calculate the theoretical yield and percent yield.
2. You need to produce 100.0 g of FeCl3 in the reaction from #3. If the percent yield of the reaction is 85%, how many grams of iron do you need to start with?