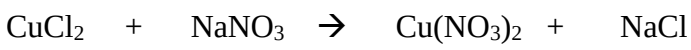
Name: _____ Date: _____ Period: _____

Limiting Reagent & Percent Yield Practice Worksheet

1. **When copper (II) chloride reacts with sodium nitrate, copper (II) nitrate and sodium chloride are formed.**
   a. Write the balanced equation for the reaction given above:



$$CuCl_2 + NaNO_3 \rightarrow Cu(NO_3)_2 + NaCl$$

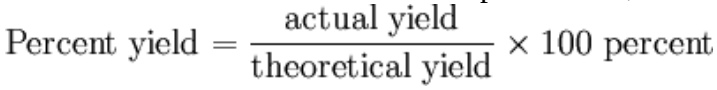
   b. If 15 grams of copper (II) chloride react with 20 grams of sodium nitrate, what is the limiting reagent for the reaction? _____

   c. How much sodium chloride in grams can be formed?

   d. How many grams of copper (II) nitrate is formed?

   e. How much of the excess reagent is left over in this reaction?

   f. If 11.3 grams of sodium chloride are formed in the reaction described in problem #2, what is the percent yield of this reaction?



$$\text{Percent yield} = \frac{\text{actual yield}}{\text{theoretical yield}} \times 100 \text{ percent}$$

2. When lead (II) nitrate reacts with sodium iodide, sodium nitrate and lead (II) iodide are formed.

a. Balance the following equation:

$$Pb(NO_3)_{2\,(aq)} + NaI_{\,(aq)} \rightarrow PbI_{2\,(s)} + NaNO_{3\,(aq)}$$

b. If I start with 25.0 grams of lead (II) nitrate and 15.0 grams of sodium iodide, what is the limiting reagent for the reaction? _____

c. How many grams of sodium nitrate can be formed?

d. How many grams of lead (II) iodide is formed?

e. How much of the non-limiting reagent will be left over from the reaction in problem #2?

f. If 6 grams of sodium nitrate are formed in the reaction described in problem #2, what is the percent yield of this reaction?