Worksheet: Mass/Mass Problems   Name_____

1. Nitrogen and hydrogen react to form ammonia gas according to the following equation.

$$\_\_\_N_2 \ + \ \_\_\_H_2 \ \rightarrow \ \_\_\_NH_3$$

a. If 56.0 grams of nitrogen are used up by the reaction, how many grams of ammonia will be produced?

b. How many grams of hydrogen must react if the reaction needs to produce 63.5 grams of ammonia?

2. Aluminum metal reacts with zinc chloride to produce zinc metal and aluminum chloride.

$$\_\_\_Al \ + \ \_\_\_ZnCl_2 \ \rightarrow \ \_\_\_Zn \ + \ \_\_\_AlCl_3$$
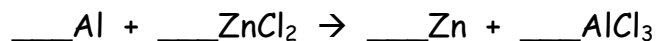
a. A mass of 45.0 grams of aluminum will react with how many grams of zinc chloride?

b. What mass of aluminum chloride will be produced if 22.6 grams of zinc chloride are used up in the reaction?

3. For the reaction whose balanced equation is as follows, find the number of grams of I_2 that will be formed when 300.0 g of bromine react.

$$2 \text{ KI } + \text{ Br}_2 \rightarrow 2 \text{ KBr } + \text{ I}_2$$
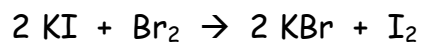
4. For the reaction whose balanced equation is as follows, find the number of grams of sodium that must react to produce 42.0 grams of sodium oxide.

$$4 \text{ Na } + \text{ O}_2 \rightarrow 2 \text{ Na}_2\text{O}$$
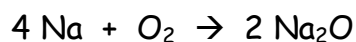
5. For the reaction whose balanced equation is as follows, find how many grams of zinc phosphate will be produced by the reaction of 5.00 grams of ammonium phosphate.

$$3 \text{ ZnCl}_2 + 2 \text{ (NH}_4)_3\text{PO}_4 \rightarrow \text{ Zn}_3(\text{PO}_4)_2 + 6 \text{ NH}_4\text{Cl}$$