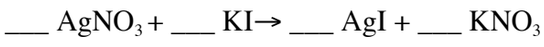
Name _____ Period _____

Roadmap Problems #2
Excess and Limiting Reactants

Perform the following conversions. Show all of your work. You must use dimensional analysis. Using units and significant figures count!

1. Consider the following reaction:



___ $AgNO_3$ + ___ KI→ ___ AgI + ___ KNO_3

a. What mass of AgI can be made by reacting 75.0 g of $AgNO_3$?

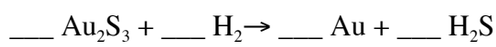
b. What mass of AgI can be made by reacting 50.0 g of KI?

c. What is the limiting reactant?

d. What mass of excess reactant remains after the reaction?

e. What is the percent yield of AgI if 68 g are formed?

2. Let's look at a reaction that forms gold:



___ Au_2S_3 + ___ H_2→ ___ Au + ___ H_2S

a. What mass of Au can be made by reacting 50.00 g Au_2S_3 ?

b. What mass of Au can be made by reacting 50.00 g of H_2?

c. What is the limiting reactant?

d. If 30.23 g of Au is formed what is the % yield of Au ?

e. How much of the limiting reactant is left over?

3. This is a classic acid base reaction:

$$\_\_\_\ HCl + \_\_\_Mg(OH)_2 \rightarrow \_\_\_\ MgCl_2 + \_\_\_\ H_2O$$

a. What mass of $MgCl_2$ can be made by reacting 100.0 g of HCl?

b. What mass of $MgCl_2$ can be made by reacting 100.0 g of $Mg(OH)_2$?

c. What is the limiting reactant?

d. What is the excess reactant?

e. What mass of excess reactant remains after the reaction?

f. What is the percent yield if 125.0 g of $MgCl_2$ are formed?

4 The following is a double replacement reaction:

$$\_\_\_\ Br_2 + \_\_\_\ KI \rightarrow \_\_\_\ KBr + \_\_\_\ I_2$$

a. What mass of I_2 can be made by reacting 20.00 g of Br_2 ?

b. What mass of I_2 can be made by reacting 10.0 g of KI

c. What is the limiting reactant?

d. If 5.0 g of I_2 are formed what is the % yield?

e. How much of the KI is left over?

f. How much of the Br_2 is left over?