Stoichiometry Worksheet I _____ Name _____

A. Balance the following reaction and then answer the questions below:

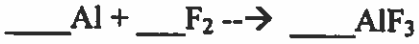
$$\_\_\_\_HgO \rightarrow \_\_\_\_ Hg + \_\_\_\_O_2$$

1. Calculate the moles of Hg produced when 4.00 moles of HgO is decomposed?

2. Calculate the moles of O_2 produced when 0.755 moles of HgO is decomposed?

3. Calculate the moles of HgO required to produce 1.80 moles of O_2?

B. Balance the following reactions and then answer the questions below:



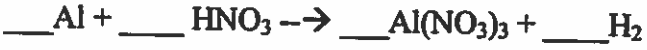
$$\_\_\_\_Al + \_\_\_F_2 \rightarrow \_\_\_\_AlF_3$$

1. Calculate the moles of aluminum fluoride produced when 5.00 moles of F_2 is reacted completely with excess aluminum?

2. Calculate the moles of aluminum required to produce 11.0 moles of aluminum fluoride if excess fluorine is used?

3. Calculate the moles of fluorine required to produce 100.0 moles of aluminum fluoride if excess aluminum is reacted?

C. Balance the following reactions and then answer the questions below:



$$\_\_\_Al + \_\_\_\_ HNO_3 \rightarrow \_\_\_Al(NO_3)_3 + \_\_\_\_H_2$$

1. How many moles of aluminum are required to produce 7.75 moles of aluminum nitrate if excess nitric acid?

2. How many moles of hydrogen gas are produced when 0.00500 moles of aluminum are reacted with excess nitric acid?

Stoichiometry Worksheet II Name _____

A. Balance the following reactions and then answer the questions below:

$$\_\_\_\_C_3H_8 + \_\_\_O_2 \rightarrow \_\_\_ CO_2 + \_\_\_ H_2O$$

1. Calculate the molar mass of propane (C_3H_8), oxygen gas (O_2), carbon dioxide (CO_2), and water.

2. How many moles of O_2 are required to react completely with 58.6 grams of propane?

3. How many grams of water are produced when 2.50 moles of propane are reacted with excess O_2?

4. How many moles of carbon dioxide are produced when 10.0 moles of water are produced?

B. Balance the following reactions and then answer the questions below:

$$\_\_\_\_B + \_\_\_\_O_2 \rightarrow \_\_\_\_\_ B_2O_3$$

1. How many grams of Boron are required to produce 9.00 moles of B_2O_3?

2. How many moles of oxygen will react with excess boron to produce 44.0 grams of B_2O_3?

3. How many moles of oxygen will react completely with 0.75 moles of boron?

Stoichiometry Worksheet III Name _____

A. Balance the following reaction and then answer the questions below (first calculate the molar mass of each reactant and product below):

$$\_\_\_\_Al + \_\_\_\_HNO_3 \dashrightarrow \_\_\_\_ Al(NO_3)_3 + \_\_\_\_ H_2$$

1. Calculate the moles of $Al(NO_3)_3$ produced when 0.200 moles of HNO_3 are reacted.

2. Calculate the grams of Al used when 1.50 moles of H_2 are produced. (Find the molar mass of Al)

3. Calculate the grams of Al required to react completely with 150.0 g of HNO_3.

4. Find the grams of $Al(NO_3)_3$ produced when 15.15 grams of H_2 are produced.

B. Balance the following reactions and then answer the questions below(first calculate the molar mass of each reactant and product below::

$$\_\_\_\_KClO_3 \dashrightarrow \_\_\_O_2 + \_\_\_\_KCl$$

1. Calculate the moles of KCl produced when 125.0 grams of $KClO_3$ is decomposed.

2. Calculate the mass of KCl produced when 9.40 grams of $KClO_3$ are decomposed.

C. Balance the following reactions and then answer the questions below:

$$\_\_\_\_Cs + \_\_\_\_N_2 \Rightarrow \_\_\_\_Cs_3N$$

1. If 14.0 moles of N_2 are reacted how many grams of Cs_3N are produced?

2. How many grams of Cs will be produced if 9.77 grams of N_2 are reacted?

3. If 5.00×10^{-3} moles of Cs are reacted, how many moles of Cs_3N will be produced?