Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block:\_\_\_\_\_ Date:\_\_\_\_\_\_\_ Stoichiometry Homework #3

Questions 1-2: **N2 + 3 F2 🡪 2 NF3**

1. To produce 12 grams of NF3, how many moles of F2 are needed?
2. If 10.0 grams of N2 are used, how many grams of NF3 are produced?

Question 3: **2 CO(g) + O2(g) 🡪 2 CO2(g)**

1. How many liters of O2 gas are needed to produce 4.75 x 1023 molecules of CO2 gas at STP?

Question 4: **C3H8 + 5 O2 🡪 3 CO2 + 4 H2O**

1. How many grams of CO2 are produced by the complete combustion of 2.5 liters of C3H8 gas at STP?

Question 5: **8 Zn(s) + S8(s) 🡪 8 ZnS(s)**

* 1. If 2.00 mol of Zn are heated with 1.00 mol of S8, how many moles of product are formed?
  2. What is the limiting reactant?
  3. If in a lab experiment, 1.00 mol of ZnS is made. What is the percent yield?

Question 6:  **Al2O3 + 2 Fe 🡪 Fe2O3 + 2 Al**

1. If 14.7 grams of Aluminum oxide reacts with 10.2 grams of Iron, how many grams of aluminum is produced?
2. What is the limiting reactant?
3. How much excess reactant is left over?
4. If in a lab experiment, 7.20 grams of aluminum is made. What is the percent yield?

ANS: **1)** 0.25 mol F2 **2)** 50.7 g NF3 **3)** 8.84 L O2 **4)** 15 g CO2 **5a)** 2.00 mol ZnS **5b)** Zn **5c)** 50.0% yield

6a) 5.10 gAl 6b) Fe 6c) 5.06 g Al2O3 left over 6d) 70.8 %