Chapter 12: Stoichiometry practice wksht #2 **Name _____**

1. **Given the equation: $Fe_2O_3 + 2\ Al \rightarrow 2\ Fe + Al_2O_3$**
   a. **How many grams of aluminum would be needed to produce 15.0 g of iron?**

   b. **How many grams of iron (III) oxide would be needed to produce 15.0 g of iron?**

   c. **How many grams of aluminum oxide would be formed if 15.0 g of iron were formed?**

2. **Given the equation: $N_2 + 3\ H_2 \rightarrow 2\ NH_3$**
   a. **What mass of ammonia would be produced if 13.4 g of nitrogen gas reacted?**

   b. **What mass of ammonia would be produced if 13.4 g of hydrogen gas reacted?**

   c. **What volume of ammonia would be produced if 13.4 g of nitrogen gas reacted (STP)?**

   d. **What volume of ammonia would be produced if 13.4 g of hydrogen gas reacted (STP)?**

   e. **What volume of ammonia would be produced if 13.4 L of nitrogen gas reacted (STP)?**

   f. **What volume of ammonia would be produced if 13.4 L of hydrogen gas reacted (STP)?**

   g. **How many molecules of ammonia would be produced if 13.4 g of nitrogen gas reacted (STP)?**

   h. **How many molecules of ammonia would be produced if 13.4 g of hydrogen gas reacted (STP)?**

3. **Given the following equation: $4\ Hg + 0_2 \rightarrow 2\ Hg_2O$**
    a. **What mass of mercury is needed to produce 23.7 g of mercury (I) oxide?**

    b. **What volume of oxygen gas (STP) is needed to produce 23.7 g of mercury (I) oxide?**

    c. **How many grams of oxygen will be needed to react with 67.3 g of mercury?**

4. **How many grams of water will be produced when 1.18 g of hydrogen gas react with excess oxygen gas?**

5. **How many grams of water will be produced when 1.18 g of oxygen gas react with excess hydrogen gas?**

6. **How many grams of silver iodide can be produced from 52.38 g of iodine and excess silver?**

7. **If 26.2 g of sulfur trioxide decompose, how many liters of oxygen gas be produced at STP?**