**Gas Stoichiometry Worksheet**

**Directions: Answer the following questions. Use sig figs, include the units.**

1. What volume of nitrogen at STP would be required to react with 12.0 grams of hydrogen to produce ammonia?

2. What volume of nitrogen at 215°C and 715 mm Hg would be required to react with 5.50 grams of hydrogen to produce ammonia?

3. Copper reacts with nitric acid to form copper (II) nitrate, nitrogen monoxide, and water. What volume of nitrogen monoxide at STP could be produced by reacting 8.74 g of Cu with and excess of nitric acid?

4. What volume of hydrogen at 35°C and 0.965 atm would be required to react with chlorine in order to produce 7.50 grams of hydrochloric acid?

5. How many grams of hydrogen would be required to produce 0.400 L of HCl at 57°C and 450 mm Hg (use chemical equation of #4)?

6. If 1.20 L carbon disulfide at 25°C and 4.23 atm reacts with oxygen to form carbon dioxide and sulfur dioxide, how many grams of each product will form?

7. When 10.7 g of Al are reacted with HCl, what volume of H2 will be produced at 47°C and 725 mm Hg?

2Al(s) + 6 HCl (aq) → 2AlCl3 (aq) + 3 H2 (g)

8. Solid potassium chlorate decomposes to produce solid potassium chloride and oxygen gas. How many grams of product are required to produce 11.50 L of oxygen at STP?