Advanced Chemistry **NAME: _____PER: _____**
Ideal Gas Law & Stoichiometry WS

Instructions: Complete the following problems. SHOW ALL WORK in the empty space below the questions. Remembers the units. Round to the nearest hundredths place.

1. Calculate the volume of oxygen you would need, at 1.150 atm and 298.0 K, to completely oxidize 50.00 g of glucose.

$$C_6H_{12}O_6(aq) + 6O_2(g) \rightarrow 6CO_2(g) + 6H_2O(l)$$

2. How many grams of CaH_2 are needed to generate 187.0 L of H_2 gas if the pressure of H_2 is 1.400 atm at 25.50ºC

$$CaH_2(s) + 2H_2O(l) \rightarrow Ca(OH)_2(aq) + 2H_2(g)$$

3. If an air bag has a volume of 28.15 L and is to be filled with N_2 gas at 2.330 atm and 21.35ºC, how many grams of NaN_3, must be decomposed?

$$2NaN_3(s) \rightarrow 2\ Na(s) + 3N_2(g)$$

4. How many liters of $NH_3(g)$ at 948.0ºC and 4.710 atm are required to react with 0.9780 mol of $O_2(g)$ in this reaction?

$$4NH_3(g) + 5O_2(g) \rightarrow 4NO(g) + 6H_2O(g)$$