Gas Practice Sheet

1. Complete the following conversion of 55.8 psi to kPa
2. A gas mixture contains each of the following gases at the indicated partial pressure. N2 (385 torr), O2 (458 torr), and H2 (682 torr). What is the total pressure of the mixture in atm?
3. A 6.75 L flask contains a fixed amount of gas at 31oC and a constant pressure. If the temperature is increased to 125oC, what will the volume of the gas be?

1. A vacuum pump exhausts a heavy-walled 1.50-L round-bottomed flask to a pressure of 3.55 x 10-6torr. How many particles are present if the temperature is 273 K?
2. It is found that 250. mL of an unknown ideal gas at STP has a mass of 2.50 g. What is the molar mass of the unknown gas?

1. Two bottles, with identical mass and volume are filled with helium at constant temperature. Bottle A is filled to a pressure of 810 torr, and bottle B is filled to 358 torr. Which bottle weighs more? Explain your answer.

1. 25.0 g of oxygen react with 25.0 g of acetylene (C2H2). How many L of CO2 at 22°C and 760 torr are formed?

2C2H2 + 5O2 🡪 4CO2 + 2H2O

1. Hexane gas burns in the presence of oxygen gas to produce water and carbon dioxide.

2 C6H14 (g) + 19 O2(g) 🡪 14 H2O(g) + 12 CO2(g)

How many L of water will be produced if 5.00 L of hexane are burned in the presence of excess oxygen gas if the pressure and temperature are held constant?