## The Ideal Gas Law 2

Name:

1) In performing an experiment at 25  $^{\circ}$ C and 755 mm Hg, a student discovers that 0.468 grams of an unknown gas is confined to a 250 mL flask. What is the molar mass of the gas?

2) At what pressure would a sample of sulfur dioxide have a density of 5.15 g/L if the temperature of the gas is  $30 \text{ }^{\circ}\text{C}$ ?

3) Fluorine gas has a density of 2.32 g/L at 22.1 psi. What temperature is the gas at?

4) What is the density of Xe gas at STP?

5) How many grams of butane gas will be in a 42.6 L tank when the pressure and temperature are 92.4 psi and -10  $^{\rm o}{\rm C}{\rm ?}$ 

6) 14.2 moles of gas are in a 305 L expandable container. 25.2 moles of gas are added to the container. What volume will the container now hold?

7) What is the molar mass of a gas that has a density of 2.72 g/L when the conditions are 0.75 atm and 111  $^{\circ}$ F?

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1) What is the density of chlorofluorocarbon (CHF<sub>3</sub>) gas at standard temperature and pressure?

2) A sample of Rn gas has a mass of 22.7 g in a 1.9 L tank. If the pressure of the sample is standard, at what temperature is the sample of Rn?

3) Determine the density of ethane gas when placed in a balloon at 82 °F and 845 mm Hg.

4) How many grams of NO gas will exist in a 5.0 L tank at 130 K and 0.50 atm?

5) What is the density of sulfur hexafluoride at 12.6 psi and 19 °C?

6) A helium balloon at 0  $^{\circ}$ C and 735 mmHg has a volume of 12.5 L. The balloon rises in the atmosphere, warms to 15  $^{\circ}$ C and changes pressure to 550 mmHg. What is the new volume of the balloon?

7) What is the molar mass of a gas that has the following conditions?: 15.0 g, 1.3 L, 1.2 atm and 292 K?