## The Ideal Gas Law 2

Name: $\qquad$

1) In performing an experiment at $25^{\circ} \mathrm{C}$ 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 $5.15 \mathrm{~g} / \mathrm{L}$ if the temperature of the gas is $30^{\circ} \mathrm{C}$ ?
3) Fluorine gas has a density of $2.32 \mathrm{~g} / \mathrm{L}$ 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 $-10^{\circ} \mathrm{C}$ ?
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 $2.72 \mathrm{~g} / \mathrm{L}$ when the conditions are 0.75 atm and $111{ }^{\circ} \mathrm{F}$ ?

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1) What is the density of chlorofluorocarbon $\left(\mathrm{CHF}_{3}\right)$ 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 $82{ }^{\circ} \mathrm{F}$ 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 $19{ }^{\circ} \mathrm{C}$ ?
6) A helium balloon at $0^{\circ} \mathrm{C}$ and 735 mmHg has a volume of 12.5 L . The balloon rises in the atmosphere, warms to $15{ }^{\circ} \mathrm{C}$ 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?: $15.0 \mathrm{~g}, 1.3 \mathrm{~L}, 1.2 \mathrm{~atm}$ and 292 K ?
