IDEAL GAS LAW WORKSHEET

1) How many moles of a gas at 100°C does it take to fill a 1.00 L flask to a pressure of 1.50 atm?

2) A camping stove uses a 5.0 L propane tank that holds 3.0 kg of liquid C_3H_8. How large a container would be needed to hold the same amount of propane as a gas at 25°C and a pressure of 3.0 atm?

3) What volume would be occupied by 100 g of oxygen gas at a pressure of 1.50 atm and a temperature fo 25°C?

4) On a warm day, an amusement park balloon is filled with 47.8 g of helium. The temperature is 33°C and the pressure in the balloon is 2.25 atm. Calculate the volume of the balloon.

5) A ten-liter gas cylinder contains 3.8×10^2 g of nitrogen. What pressure, in kPa, is exerted by the nitrogen at 25°C?

6) A drum used to transport crude oil has a volume of 162 L. How many water molecules, as steam, are required to fill the drum at 1.00 atm and 100°C? (1 mole = 6.022×10^{23} molecules)

7) How many moles of air are there in a 125 mL erlenmeyer flask if the pressure is 755 mm Hg and the temperature is 20°C?

8) Use the Ideal Gas Law to complete the following table for ammonia gas.

PRESSURE	VOLUME	TEMPERATURE	MOLES	GRAMS
2.50 atm		0°C		32.0 g
kPa	75.0 mL	30°C		0.385
768 mmHg	6.0 L	100°C		
195 kPa	2.75 L			45.0 g