

Name: _____
Hour: _____ Date: _____

Chemistry: *The Ideal Gas Law* ***Worksheet K-3***

Directions: Solve each of the following problems. Show your work, including proper units, to earn full credit.

1. If 3.7 moles of propane are at a temperature of 28°C and are under 154.2 kPa of pressure, what volume does the sample occupy?

2. A sample of carbon monoxide at 57°C and under 0.67 atm of pressure takes up 85.3 L of space. What mass of carbon monoxide is present in the sample?

3. At -45°C, 71 g of fluorine gas take up 6843 mL of space. What is the pressure of the gas, in kPa?

4. At 971 mm Hg, 145 g of carbon dioxide have a volume of 34.13 dm³. What is the temperature of the sample, in °C?

5. At 137°C and under a pressure of 3.11 atm, a 276 g sample of an unknown noble gas occupies 13.46 L of space. What is the gas?

Answers: 1. 60.0 L 2. 59 g CO 3. 517.6 kPa 4. -112°C 5. radon

6. A sample of gas with a mass of 26 g occupies a volume of 392 L at 32°C and at a pressure of 0.95 atm. Find the density of the gas at STP.
7. If four moles of a gas at a pressure of 5.4 atmospheres have a volume of 120 liters, what is the temperature?
8. If I initially have a gas with a pressure of 84 kPa and a temperature of 35° C and I heat it an additional 230 degrees, what will the new pressure be? Assume the volume of the container is constant.
9. My car has an internal volume of 2600 liters. If the sun heats my car from a temperature of 20° C to a temperature of 55° C, what will the pressure inside my car be? Assume the pressure was initially 760 mm Hg.
10. How many moles of gas are in my car in problem #9?