Chemistry: *The Ideal Gas Law*

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 dm^3. 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