CHEMISTRY MATTERS
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Unit 9F Practice Problems IV
Gas Laws

Name:

Date:

Complete each of the following. Show your work and circle your final answer on all problems.

1. A 952 cm^3 container of gas is exerting a pressure of 108 kPa while at a temperature of 48 °C. Calculate the pressure of this same amount of gas in a 1236 cm^3 container at a temperature of 64 °C.

2. At STP, a sample of gas occupies 24.5 mL. Calculate the volume of this gas at a pressure of 2.3 atm and a temperature of 301 K.

3. A 3.25 L container of ammonia gas exerts a pressure of 652 mm Hg at a temperature of 243 K. Calculate the pressure of this same amount of gas in a 2.50 L container at a temperature of 221 K.

4. A sample of gas has a volume of 5.23 cm^3 at a pressure of 72.6 kPa and a temperature of 25 °C. What will be the volume of the gas if the pressure is changed to 124 kPa and the temperature is changed to 0 °C?

questions continued on next page

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5. Calculate the pressure (in kPa) of 0.421 mole of helium gas at 254 K when it occupies a volume of 3.32 L.

6. How many moles of argon are there in a 22.4 L sample of gas at 101.3 kPa and 0 °C?

7. What is the volume of 2.56 moles of gas at 0.634 atm and 65 °C?

8. A 500.0 g block of dry ice (solid CO_2, molar mass = 44.0 g) vaporizes to a gas at room temperature. Calculate the volume of gas produced at 25.0 °C and 1.50 atm.