

Gas Laws

Name: _____

Show set-up and all work (including units) to receive full credit. Round answers to correct number of significant figures.

1) The gas in a 10.0 L container exerts a pressure of 105 kPa. What will be the gas pressure if the gas is compressed to a volume of 1.50 L (and keeping the temperature constant)?

2) A gas occupies 200. m³ at 125 K and 725 mm Hg. What will be the gas volume at 400. K and 500. mm Hg?

3) A sample of gas has a pressure of 500 mL psi at 80 K. What will be the new temperature at constant pressure if the volume is increased to 3.0 L?

4) 0.45 moles of a gas in a balloon occupies 3.5 L at a temperature of 293 K. 0.95 moles of the same gas are added to the balloon. What will be the gas volume if the temperature and pressure are held constant?

5) What is the atmospheric pressure if the partial pressures of nitrogen, oxygen and argon are 602.3 mm Hg, 170.4 mm Hg, and 1.3 mm Hg, respectively?

6) A gas cylinder (with fixed volume) contains nitrogen at a pressure of 18.0 atm when at 25.0 °F. What will be the nitrogen pressure in the cylinder when the temperature is raised to 110. °F?