

CHEM 106 Chapter 13 Gas Laws

- 1.** A sample of an ideal gas occupies 10.0 liters and exerts a pressure of 0.588 atm. If the volume of the gas is increased to 35.2 liters, what is the new pressure. Assume temperature and moles are constant.

- 2.** A gas has a volume of 355.0 mL at 25.0°C. If the temperature is increase to 150.0°C, what is the new volume? Assume pressure and moles are constant.

- 3.** A balloon is filled to 0.105 liters at -10.0°C with air pressure 656.5 torr. The balloon is allowed to reach the upper atmosphere where the temperature is -55.0°C and air pressure is 105.2 torr. What is the volume of the balloon under these conditions? Assume the number of gas particles (moles) remains constant.

4. How many moles of gas would occupy a volume of 250. mL, at a temperature of 50.°C, exerting a pressure of 39.5 psi?

- 5.** 20.0 grams of each of the following gases are placed in a balloon at STP: krypton, carbon dioxide, and chlorine. What is the volume of the balloon?

6. Consider the reaction below What volume of oxygen at 55°C and 1.044 atm will yield 10.0 grams of aluminum oxide?

