Boyle’s Law Practice Problems

**Equation: P1V1 = P2V2**

Solve the following problems assuming constant temperature.

1. A sample of oxygen gas occupies a volume of 250.0 mL at 740.0 torr pressure. What volume will it occupy at 800.0 torr pressure?

2. A sample of carbon dioxide occupies a volume of 3.50 liters at 125 kPa pressure. What pressure would the gas exert if the volume decreased to 2.00 liters.?

3. A 2.0 liter container of nitrogen had a pressure of 3.2 atm. What volume would be necessary to decrease the pressure to 1.0 atm?

4. Ammonia gas occupies a volume of 450.0 mL at a pressure of 720.0 mm Hg. What volume will it occupy at standard pressure?

5. A 175 mL sample of neon had its pressure changed from 75 kPa to 150 kPa. What is the new volume?

6. A sample of hydrogen at 1.5 atm had its pressure changed to 0.50 atm producing a new volume of 750 mL. What was its original volume?

7. Chlorine gas occupies a volume of 1.2 liters at 720 torr pressure. What volume will it occupy at 1 atm of pressure?

8. Fluorine gas exerts a pressure of 900.0 torr. When the pressure is changed to 1.50 atm, its volume is 250 mL. What was the original volume?