

Boyle's Law

1. If a gas at 25.0 °C occupies 3.60 liters at a pressure of 1.00 atm, what will be its volume at a pressure of 2.50 atm? **1.44 L**
2. A gas occupies 1.56 L at 1.00 atm. What will be the volume of this gas if the pressure becomes 3.00 atm?
3. A gas occupies 11.2 liters at 0.860 atm. What is the pressure if the volume becomes 15.0 L?
0.642 atm
4. When the pressure on a gas increases, will the volume increase or decrease?
5. If the pressure on a gas is decreased by one-half, how large will the volume change be?
6. A gas occupies 4.31 liters at a pressure of 0.755 atm. Determine the volume if the pressure is increased to 1.25 atm.
7. 600.0 mL of a gas is at a pressure of 8.00 atm. What is the volume of the gas at 2.00 atm? **2400 mL**
8. 4.00 L of a gas are under a pressure of 6.00 atm. What is the volume of the gas at 2.00 atm?
9. A sample of gas has a volume of 12.0 L and a pressure of 1.00 atm. If the pressure of gas is increased to 2.00 atm, what is the new volume of the gas? **6L**
10. A container of oxygen has a volume of 30.0 mL and a pressure of 4.00 atm. If the pressure of the oxygen gas is reduced to 2.00 atm and the temperature is kept constant, what is the new volume of the oxygen gas?
11. A 40.0 L tank of ammonia has a pressure of 8.00 atm. Calculate the volume of the ammonia if its pressure is changed to 12.0 atm while its temperature remains constant. **26.7 L**
12. Boyle's Law deals what quantities?
 - a. pressure/temperature
 - b. pressure/volume
 - c. volume/temperature
 - d. volume temperature/pressure
13. A 1.5 liter flask is filled with nitrogen at a pressure of 12 atmospheres. What size flask would be required to hold this gas at a pressure of 2.0 atmospheres? **9L**
14. What pressure is required to compress 196.0 liters of air at 1.00 atmosphere into a cylinder whose volume is 26.0 liters?