

Salt Lake Community College, Chemistry Department

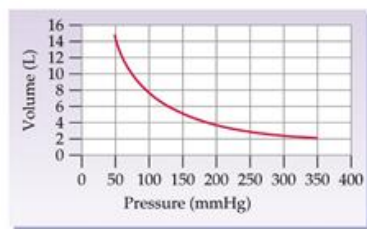
Chem 1110 Workshop 9

Topic: Gases Part I

**Objective:**

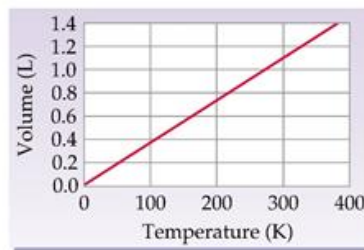
- To understand and use the several individual gas laws, the combined gas law, and the ideal gas law to predict and explain how gases respond to changes in pressure and volume

- Boyle's Law:**



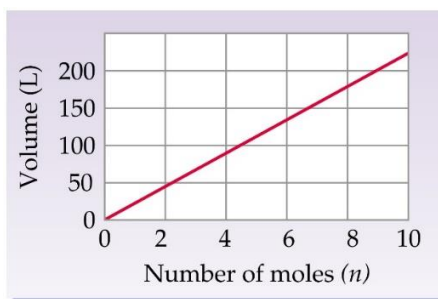
(a)

- Charles's Law:**



Pearson Inc

- Avogadro's Law:**



**Practice Problems:**

- Volume and pressure are \_\_\_\_\_ proportional.
  - directly
  - inversely
  - all of the above
  - none of the above
- According to Avogadro's Law, the volume of a gas will \_\_\_\_\_ as the \_\_\_\_\_ is increased while the \_\_\_\_\_ are held constant.
  - increase; number of moles; pressure and temperature
  - decrease; number of moles; pressure and temperature
  - increase; temperature; pressure and number of moles
  - decrease; pressure; temperature and number of moles
  - increase; pressure; temperature and number of moles

2. If the temperature of a 1.75 liter sample of gas is changed from 30.0°C to 20.0°C at constant pressure, what will be the new volume?
3. What is the new volume of a balloon originally at 755 torr and 5.00 L is placed in a container in which the pressure is increased to 1.25 atm?
4. A 6.3 L sample of helium gas stored at 25 °C and 1.0 atm pressure is transferred to a 2.0 L tank and maintained at a pressure of 2.8 atm. What temperature is needed to maintain this pressure?
5. Which of the following is the definition of standard temperature and pressure?
  - a) 273°C and 760 torr
  - b) 298 K and 1 atm
  - c) 273 K and 760 mm Hg
  - d) 0 K and 1 atm