Chapter 12  Gases and the Kinetic-Molecular Theory

Objectives

After studying this chapter you should be able to do the following:

☐ Know and be able to use the common units of pressure, and how a manometer is used to measure gas pressures.

☐ Know the general gas law and ideal gas law and how to use them.

☐ Know how to represent by means of graphs, the dependence of P, V, T, n, and PV on the other variables in the gas equations.

☐ Know the values of STP and standard molar volume and when to use them.

☐ State and be able to use Avogadro's law.

☐ Be able to calculate molar masses of gases and gas densities from the ideal gas equation.

☐ Solve stoichiometric problems involving gases.

☐ Solve problems involving mixtures of gases using Dalton's law of partial pressures or the ideal gas law.

☐ Know the major points about the kinetic molecular theory.

☐ Know and apply Graham's law of effusion/diffusion.

☐ Be able to explain how a real gas differs from an ideal gas. Know under what conditions gases are most nearly ideal. Name an equation of state that can be used for real gases.

Suggested Problems
16, 24, 25, 32, 38, 46, 52, 58, 66, 68, 96, 106, + do as many as you need to learn the material.