AP Chemistry Chapter 5 Test

Equations and Constants

$R = 0.08206 \ \frac{L \bullet atm}{mole \bullet K}$ 1 atm = 760 torr = 760 mm Hg = 14.7 psi

$R = 8.3145 \ \frac{J}{mole \bullet K}$

PV = nRT

$P = \frac{dRT}{MM}$ where $d = density = \frac{mass}{volume}$ and $MM = molar\ mass = \frac{mass}{moles}$

$\chi_1 = \frac{n_1}{n_T} = \frac{P_1}{P_T}$ where n = number of moles

Van der Waal's Equation:

$\left[P + a\left(\frac{n}{V}\right)^2\right](V - nb) = nRT$ where V = volume of container

$KE = \frac{1}{2} mv^2$ where v = velocity

$KE = \frac{3}{2} RT$

$v = \sqrt{\frac{3RT}{M}}$ where v = velocity and M is the molar mass

$\frac{Rate_1}{Rate_2} = \frac{\sqrt{M_2}}{\sqrt{M_1}}$ where M is the molar mass