

- Boyle's Law

$$P_i V_i = P_f V_f$$

- Charles's Law

$$V_i/T_i = V_f/T_f$$

- Avogadro's Law

$$V_i/n_i = V_f/n_f$$

- Molar Volume

22.4 L @ 1atm and 273 K (STP)

24.8 L @ 100 kPa & 298K (SATP)

- Combined Gas Law

$$\frac{P_1 V_1}{n_1 T_1} = \frac{P_2 V_2}{n_2 T_2}$$

- Ideal Gas Law

$$PV = nRT$$

- 1 atm = 760.0 mm Hg = 101.3 kPa

- °C = K - 273

density = mass / Volume

$$d = m/V$$

$$d = \frac{PM}{RT}$$

Substitute into ideal gas law:

$$PV = nRT$$

Molecular Weight = mass / moles (n)

$$M = m/n$$

$$PV = \frac{m}{MRT}$$

Substitute into ideal gas law:

$$PV = nRT$$

The Ultimate Mole Conversion Picture

