

Mar 2-8:37 AM

Chap 12 Gases

- **FAST** Weak IMF
- No definite shape
- No definite Volume
- Gas Laws.
 - $\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$
 - KELVIN** →

IDEAL GAS

low → NO mass

↑ V, ↓ P, ↑ T

Mult = Indirect

Division = Direct

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Dalton's Law

Total Pressure = Sum of Partial pressures,
(parts)

$$P_{\text{total}} = P_{\text{gas}_1} + P_{\text{gas}_2} + \dots + P_{\text{gas}_n}$$

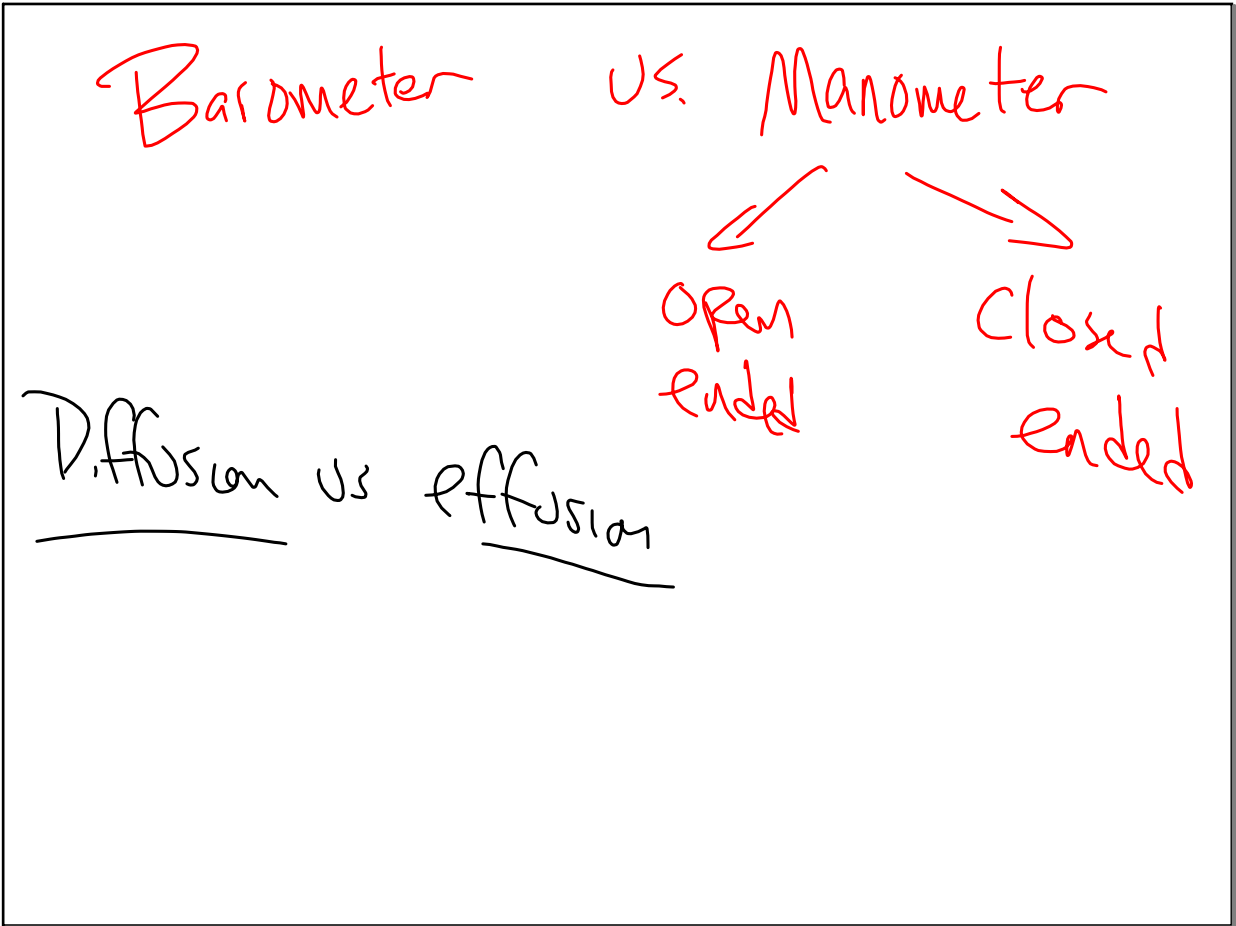
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$PV = nRT$
 P → ATM
 V → l
 n → moles
 R → $R = 0.08206 \frac{\text{l} \cdot \text{atm}}{\text{mole} \cdot \text{K}}$
 T → K

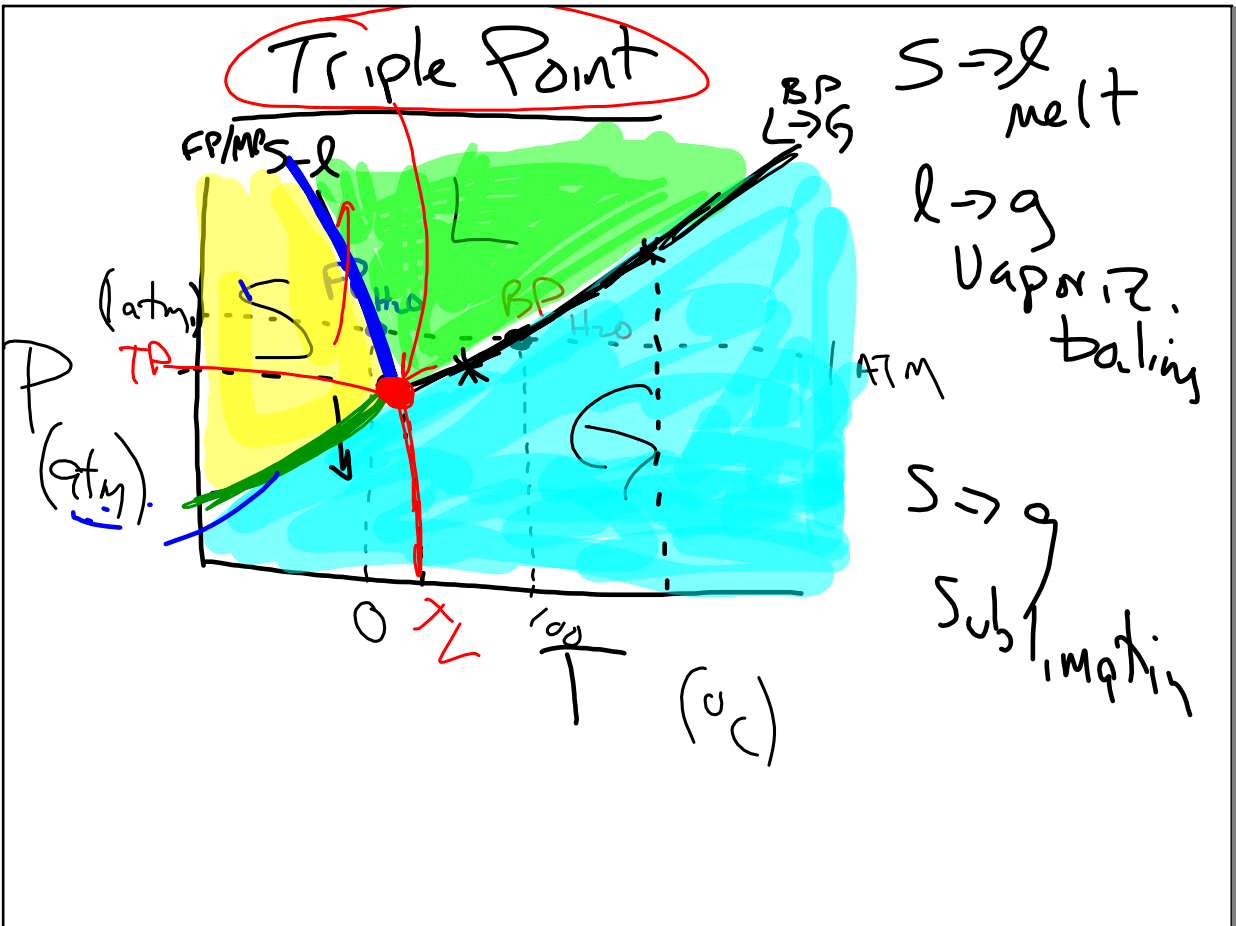
$n = \frac{g}{MW}$
 (moles)

density = $\frac{g}{V} = \frac{P(MW)}{RT}$

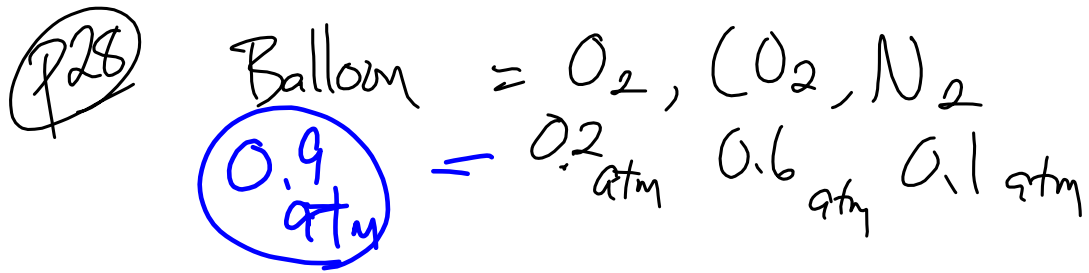
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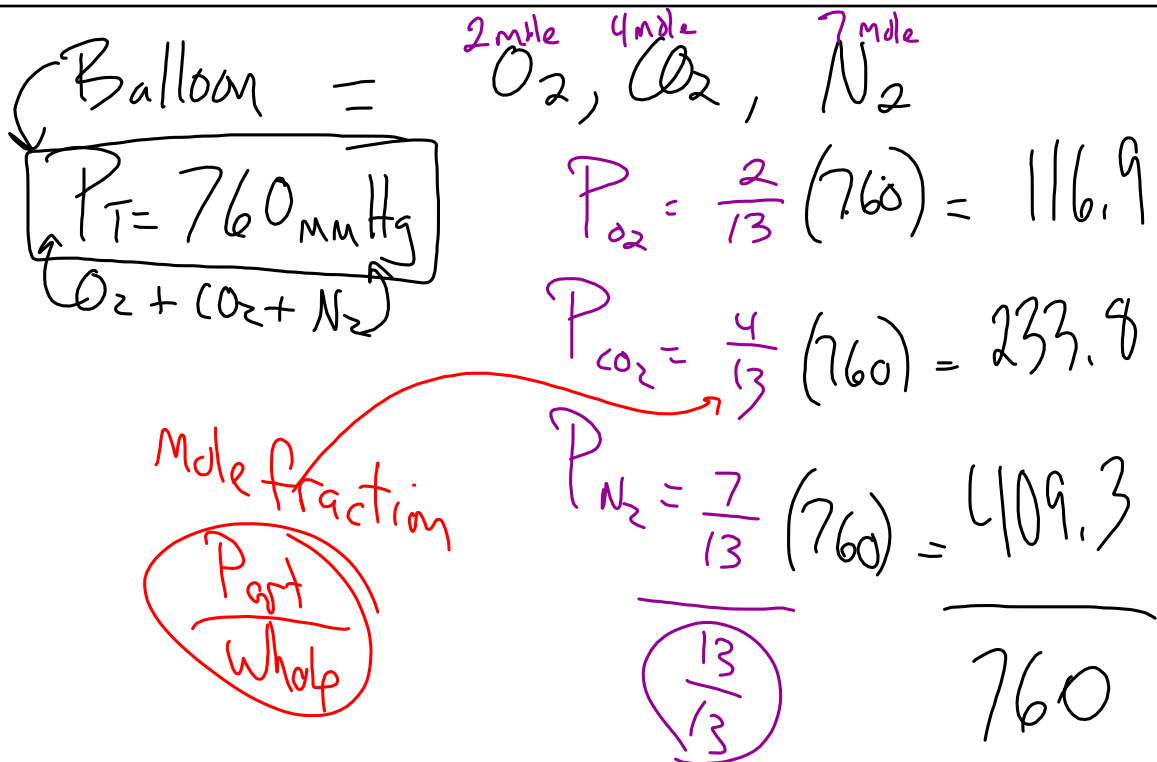


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% Filled with $CO_2 = \frac{P_{part}}{P_{whole}} \times 100 = \frac{0.6}{0.9} \times 100 = 66.7\%$
 % $O_2 = \frac{0.2}{0.9} \times 100 = 22.2\%$

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p28 ① 250ml O_2 25°C 760 mmHg
 WET
 → dry + H_2O

$P_{H_2O} = 23.8 \text{ torr}$

$P_{dry} = ?$

$P_{TOTAL} = P_{H_2O} + P_{dry}$
 $760 = 23.8 + P_{dry}$
 736.2 torr

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② or V 32 ml $H_2(g)$ 20°C 750 torr
 P_T

$P_{H_2O} = 17.5 \text{ torr}$

$P_{dry} = 732.5 \text{ torr}$

$V_{dry} = ?$

$\frac{PV}{T} = \frac{PV}{T}$

$750(32) = 732.5(V_2)$

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p26 @ $P = 1.2 \text{ atm}$, $V = 31 \text{ L}$, $T = 67^\circ \text{C}$, $n = ?$

$$PV = nRT$$

$$(1.2)(31) = n(0.08206)(360)$$

$$n = \frac{1.26 \text{ mol}}{1} * \frac{44 \text{ g CO}_2}{1 \text{ mol CO}_2}$$

? g CO_2

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At a certain T, Pressure Triples

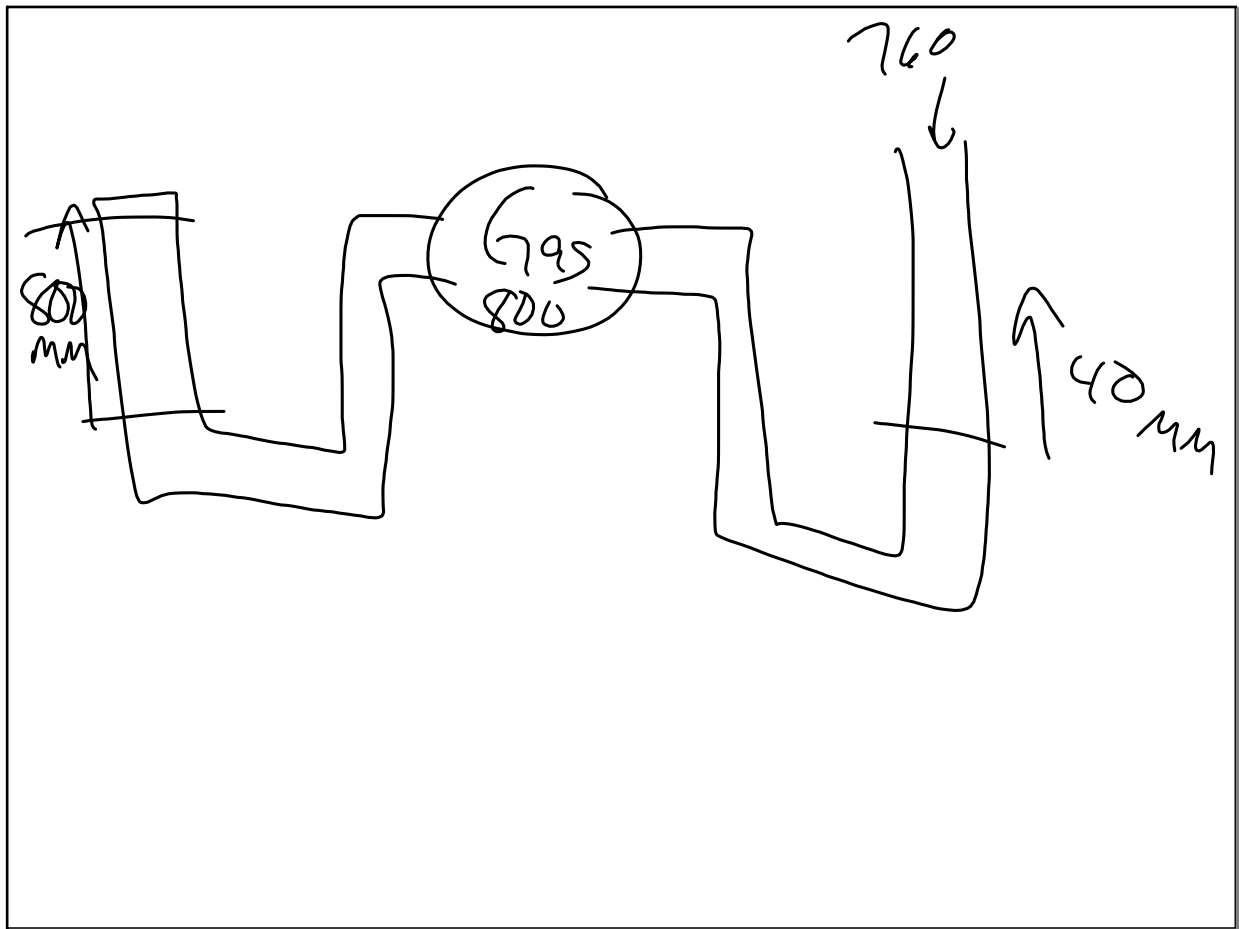
$$PV = PV$$

$\begin{matrix} \uparrow 3 \\ \uparrow \\ \downarrow \\ \downarrow 3 \end{matrix}$

What happens to Volume?

$$\left(\frac{1}{3} \right)$$

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Mar 2-9:57 AM