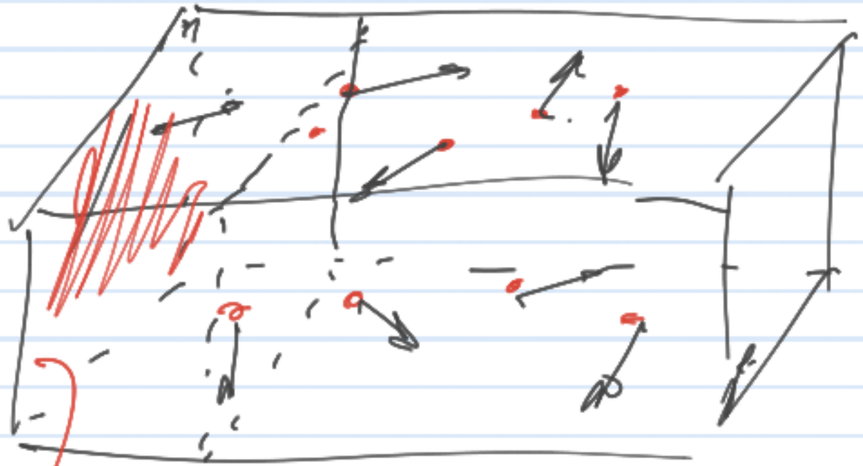
Universidad Nacional de Río Negro
Física III B – 2021

- **Unidad** 01
- **Clase** U01 C04 - 04/30
- **Fecha** 25 Mar 2021
- **Cont** Energía Interna
- **Cátedra** Asorey
- **Web** https://gitlab.com/asoreyh/unrn-f3b

RIO NEGRO

Notas de Clase



V

N

$\langle v_x \rangle = \langle v_y \rangle = \langle v_z \rangle$

$\vec{F} = \frac{d\vec{p}}{dt}$

Presión

$K_B T$

$P = \frac{N}{V} \frac{2}{3} \langle E_K \rangle$

$PV = N K_B T \Rightarrow$

$PV = nRT$

n R

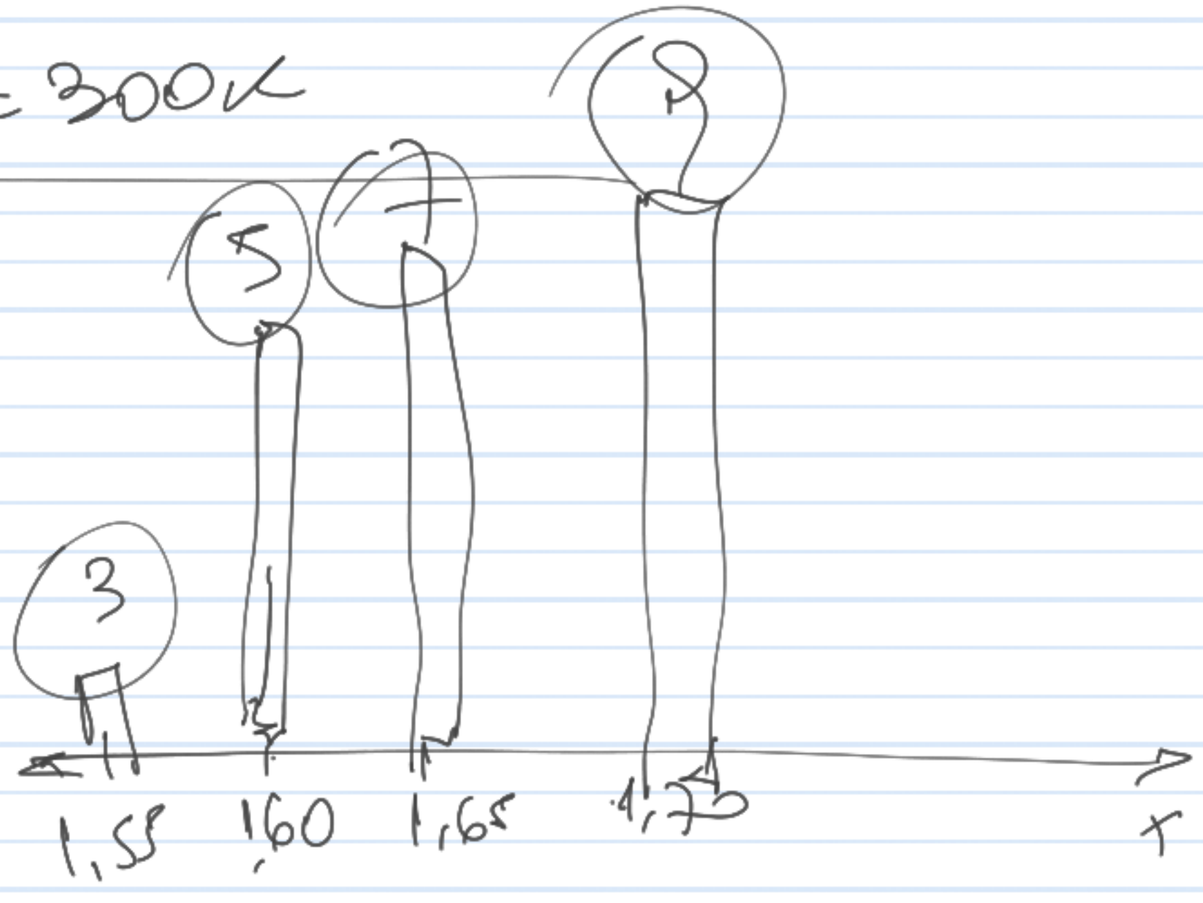
$PV = \frac{N}{N_A} (N_A K_B) T$

$$v_{RMS} = \sqrt{\langle v^2 \rangle}$$

$$v_{RMS} = \sqrt{\frac{3RT}{M}} \rightarrow He \rightarrow 1370\ m/s$$

$T = 300K$

Atom				
1,45				
1,50	1			1
1,55	1			2
1,60	1	1	.....	10
1,65	1			5



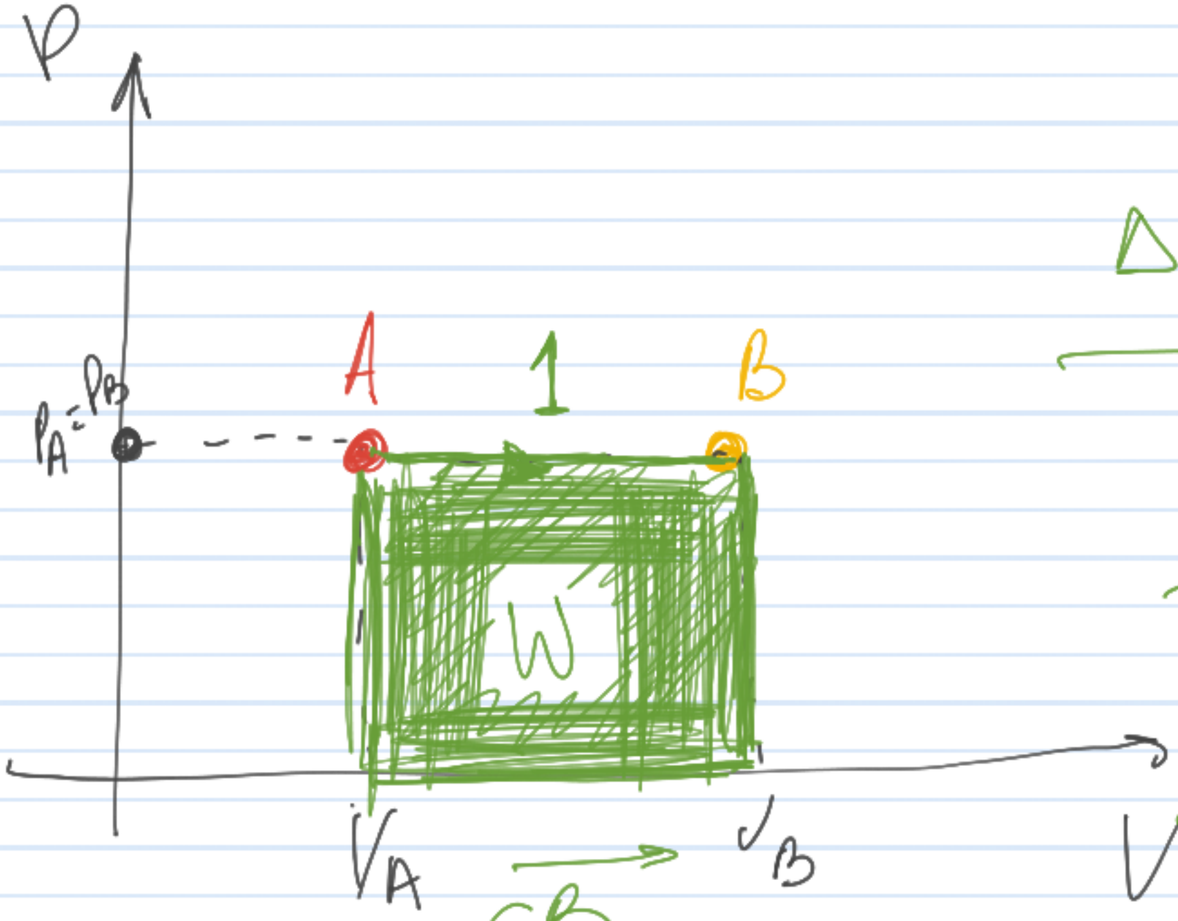
$$P\,V = \underbrace{n}\,\underbrace{\hat{R}\,T} = cte$$

$\Rightarrow P = cte / V$ ← Hipérbolo

$PV = nRT$ n y r son cte

$$\frac{P}{T} = \left(\frac{nR}{V}\right) = cte$$

$PV = nRT$ y n y P son cte $\rightarrow$ $\frac{V}{T} = \left(\frac{nR}{P}\right) = ct$



$$\Delta V = (V_B - V_A)$$

$$W = p_A \cdot \Delta V \Rightarrow W = p \cdot (V_B - V_A)$$

El trabajo es el área contenido bajo la curva.

$$W = \int_A^B p \, dV \quad a \; p = Cte \Rightarrow W = p \int_A^B dV \Rightarrow W = p \cdot V \Big|_A^B$$

$$\Rightarrow W = p \cdot (V_B - V_A) = p \Delta V$$

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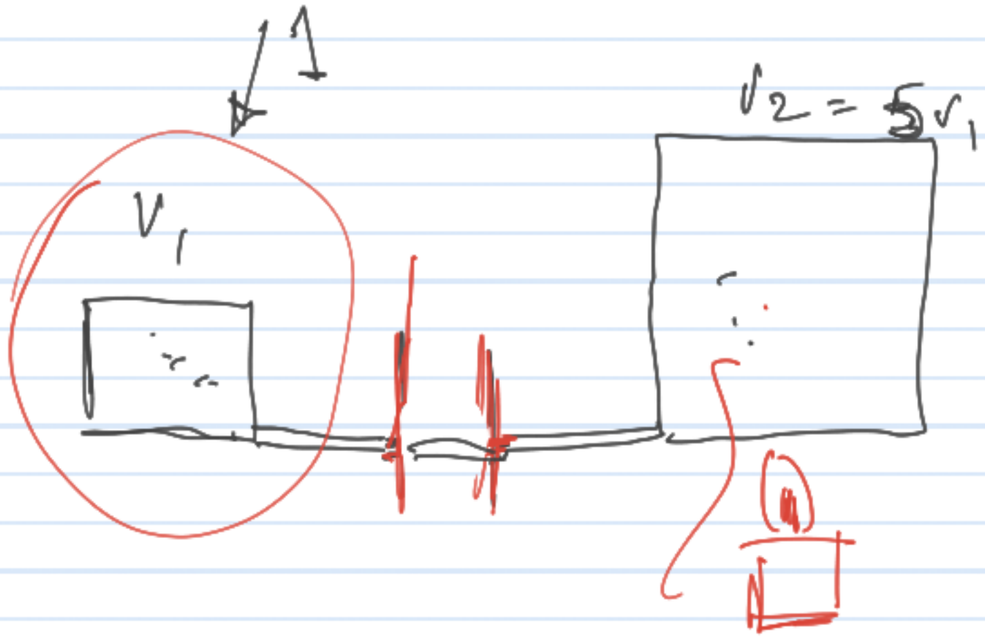

$V_T = V_2 + V_1 = 6V_1$

$P_i = 1866,5\ hPa$ $T_i = 293K$

$T_{2f} = 373K$

$n_T = n_1 + n_2$

(C) $P_0 \cdot V_C = n_C R T_C$

$P_A = 1866,5\ hPa$

$T_A = 293K$

$V_A = V_1 + V_2 = 6V_1$

$n_A = n_1 + n_2$

$T_f \longrightarrow P_f$

(A) Estado inicial $P_A \cdot V_A = n_A \cdot R T_A$

(B) $P_{B1} \Rightarrow P_{B1} \cdot V_{B1} = n_{B1} R T_{B1}$

$P_{B2} \Rightarrow P_{B2} \cdot V_{B2} = n_{B2} \cdot R T_{B2}$