$v = k[A]^m[B]^n$ $\quad aA \longrightarrow bB$

$m+n \Rightarrow$ ORDINE DI REAZIONE.

- $A \longrightarrow P \quad m=1 \longrightarrow kt = \ln \frac{a}{a-x}$

	A	P
i	a	
f	a−x	

$A \longrightarrow P \quad m=2 \longrightarrow kt = \frac{x}{(a-x)x}$

- $A + B \longrightarrow P \quad m, n = 1 \quad kt = \frac{1}{a-b} \ln \frac{(a-x)}{a} \cdot \frac{b}{(b-x)}$

$mA + nB \longrightarrow P \quad x+y \Rightarrow$ ORDINE DI REAZIONE

	mA	nB	P
i	a	b	
t	a−mx	b−nx	

$kt = \frac{1}{na-mb} \cdot \ln \frac{a-mx}{a} \cdot \frac{b}{b-nx}$

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- $aA + bB \longrightarrow pP + qQ$ (omogenea)

$K_c = \frac{[P]^p[Q]^q}{[A]^a[B]^b} \qquad Q_{\text{di reazione}} = \frac{[P]^p[Q]^q}{[A]^a[B]^b}$

$K_p = k_c \cdot (RT)^{\Delta n}$

- $\Delta n = n_{gas}(\text{prodotti}) - n_{gas}(\text{reagenti})$

Legge di Hess.

Analoga per reazioni equilibrio $K_{gl} = K_1 \times K_2 \times K_3 \ldots$

Se $Q < K \rightarrow$ Numeratore cresce e Denominatore cresce.

Se $Q > K \rightarrow$ Numeratore diminuisce e Denominatore aumenta.

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• ENERGÍA DEL GAS

$$\frac{1}{2} m \langle v^2 \rangle = \frac{3}{2} nRT = E_{cin}$$

$T = 300\,K$ $\quad n = 1$ $\quad m_m = 4$.

$$E_{cin} = \frac{3}{2} nRT = 3{,}741 \cdot 10^{-3}\,J$$

$$\frac{1}{2} \cdot 4 \cdot 10^{-3}\,kg \cdot v^2 = 3{,}741 \cdot 10^{-3}\,J$$

$$v = \sqrt{\frac{3{,}741 \cdot 10^{-3}\,J}{4 \cdot 10^{-3}\,kg}} = 1{,}37 \cdot 10^{3}\,m/s$$

$$\frac{1}{2} m_1 \langle v_1^2 \rangle = \frac{1}{2} m_2 \langle v_2^2 \rangle$$

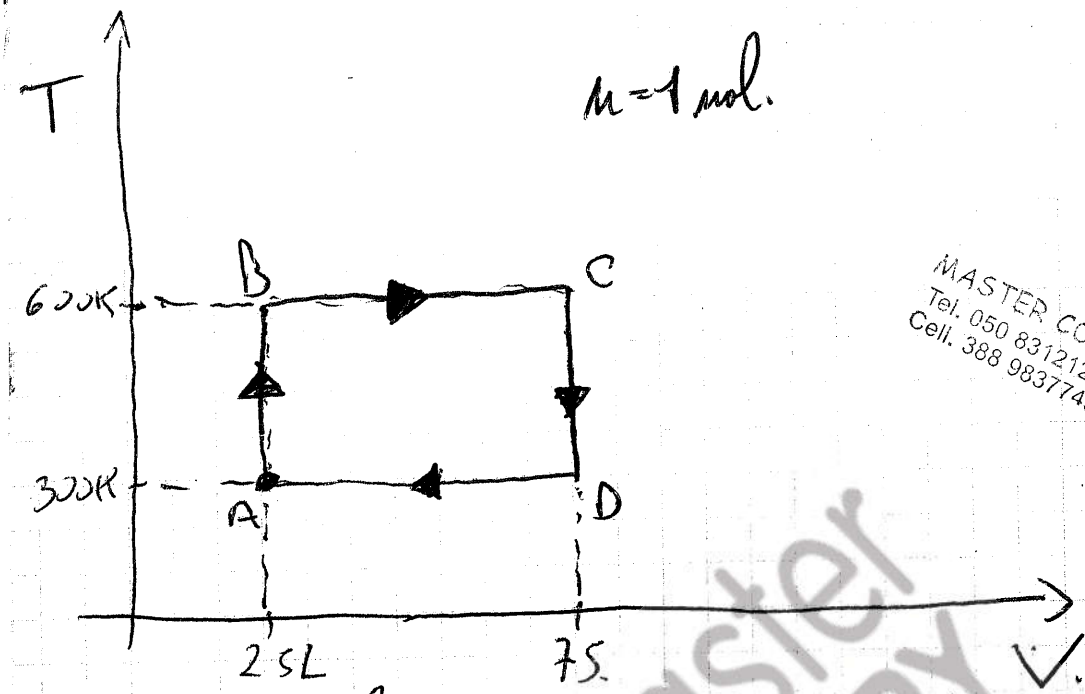
$$\frac{m_1}{m_2} = \frac{\langle v_2^2 \rangle}{\langle v_1^2 \rangle}$$

$$\langle v_2^2 \rangle = \frac{m_1}{m_2} \langle v_1^2 \rangle \Rightarrow \sqrt{\frac{m_1}{m_2} \cdot v_1^2}$$

m_1 → HIDRÓGENO. $\quad m_2$ → ARGÓN

$$\langle v_2^2 \rangle = \frac{4}{39{,}4} \cdot (1{,}37 \cdot 10^3)^2 = 4{,}34 \cdot 10^2\,m/s$$

$n = 1$ mol.



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- Trovare la pressione in ogni punto
- Trovare la temperatura in un grafico $PV = nRT$

$$P_A = \frac{1 \cdot 0{,}0821 \cdot 300}{2{,}5} = \boxed{0{,}985 \text{ atm}}$$

$$P_B V_B = nRT_B \qquad \left[\frac{P_B}{P_A} = \frac{T_B}{T_A}\right]$$
$$P_A V_A = nRT_A$$

$$P_B = \frac{T_B}{T_A} P_A = 0{,}985 \cdot \frac{600}{300} = 1{,}97 \text{ atm.}$$

$$P_C V_C = nRT_C$$
$$P_B V_C = nRT_B$$

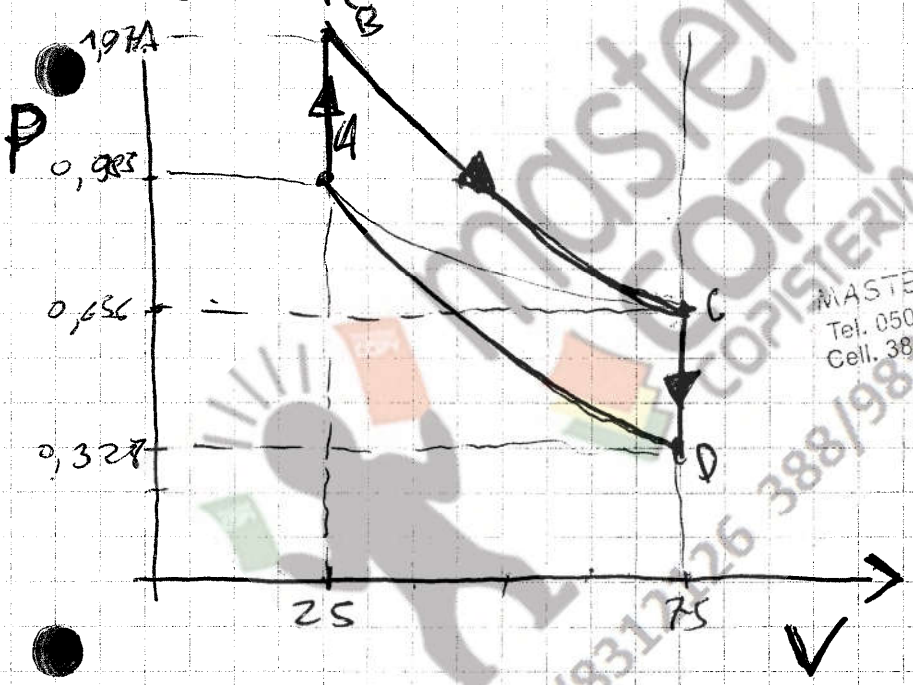
$$\frac{P_C V_C}{P_B V_B} = 1 \qquad P_C = P_B \cdot \frac{V_B}{V_C}$$

$P_C = 1{,}97\ atm \cdot \frac{1}{3} = 0{,}650\ atm.$

$P_D V_D = nRT_D$

$P_C V_C = nRT_C$

$\frac{P_D}{P_C} = \frac{T_D}{T_C}$ $\quad P_D = \frac{T_D}{T_C} \cdot P_C = 0{,}328\ atm.$



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