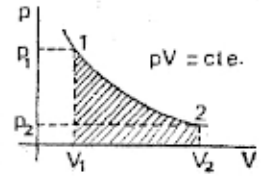
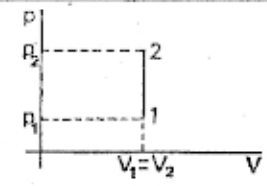
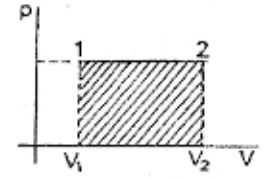
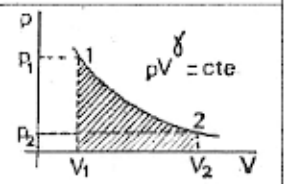
PROCESOS	RELACIONES	ENERGÍA INTERNA	TRABAJO	CALOR	ENTALPÍA	ENTROPÍA	GRÁFICAS
FÓRMULAS GENERALES	$pV = nRT$	$dU = nc_v dT$	$dW = pdV$	$dQ = dU + dW$	$H = U + pV$	$dS = \frac{dQ}{T}$	
ISOTERMO $T = cte$ $dT = 0$	$pV = cte$ $p_1V_1 = p_2V_2$	$dU = 0$ $U_{1,2} = 0$	$W_{1,2} = nRT \ln \frac{V_2}{V_1}$	$dQ = dW$ $Q_{1,2} = nRT \ln \frac{V_2}{V_1}$	$dH = 0$ $H_{1,2} = 0$	$S_{1,2} = \frac{Q_{1,2}}{T} = nR \ln \frac{V_2}{V_1}$	
ISÓCORO $V = cte$ $dV = 0$	$\frac{p}{T} = cte$ $\frac{p_1}{T_1} = \frac{p_2}{T_2}$	$U_{1,2} = nc_v(T_2 - T_1)$	$dW = 0$ $W_{1,2} = 0$	$dQ = dU = nc_v dT$ $Q_{1,2} = nc_v(T_2 - T_1)$	$dH = nc_p dT$ $H_{1,2} = nc_p(T_2 - T_1)$	$S_{1,2} = nc_v \ln \frac{T_2}{T_1}$	
ISOBÁRICA $p = cte$ $dp = 0$	$\frac{V}{T} = cte$ $\frac{V_1}{T_1} = \frac{V_2}{T_2}$	$U_{1,2} = nc_v(T_2 - T_1)$	$W_{1,2} = p(V_2 - V_1)$	$dQ = dH = nc_p dT$ $Q_{1,2} = nc_p(T_2 - T_1)$	$dH = dQ$ $H_{1,2} = nc_p(T_2 - T_1)$	$S_{1,2} = nc_p \ln \frac{T_2}{T_1}$	
ADIABÁTICO $Q = cte$ $dQ = 0$	$pV^\gamma = cte$ $TV^{\gamma-1} = cte$ $p^{1-\gamma}T^\gamma = cte$	$U_{1,2} = nc_v(T_2 - T_1)$	$dW = -dU = -nc_v dT$ $W_{1,2} = \frac{p_1V_1 - p_2V_2}{\gamma - 1}$	$dQ = 0$ $Q_{1,2} = 0$	$dH = nc_p dT$ $H_{1,2} = nc_p(T_2 - T_1)$	$dS = 0$ $S_{1,2} = 0$	

c_v = calor molar a volumen constante
c_p = calor molar a presión constante

$c_p - c_v = R$

$R = 8,3 \frac{J}{mol \cdot K} = 0,082 \frac{atm \cdot l}{mol \cdot K}$

coeficiente adiabático: $\gamma = \frac{c_p}{c_v}$

gases monoatómicos: $\gamma = \frac{5}{3}$ $c_v = \frac{3}{2}R$ $c_p = \frac{5}{2}R$

gases diatómicos: $\gamma = \frac{7}{5}$ $c_v = \frac{5}{2}R$ $c_p = \frac{7}{2}R$

Unidades del Sistema Internacional

Presión	p $(N/m^2 = Pascal)$
Volumen	V (m^3)
Temperatura	T (K)
Calor	ΔQ (J)
Trabajo	ΔW (J)
Energía interna	U (J)
Entropía	S (J/K)
Calor molar	c_p, c_V $(J/\text{mol} \cdot K)$
Calor específico	c_e $(J/Kg \cdot K)$

Cambios de unidades más frecuentes

1 atm = $1,014 \cdot 10^5 \, N/m^2$
1 l = $10^{-3} \, m^3$
1 atm $\cdot$ l = 101,4 J
1 cal = 4,18 J
1 CV = 735,5 W

1ºC = +273 K