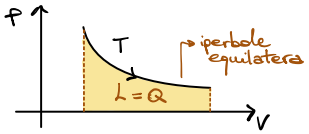
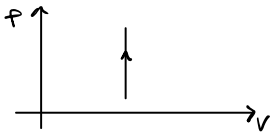
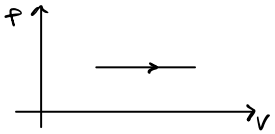
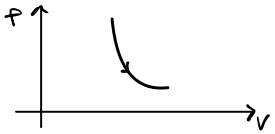
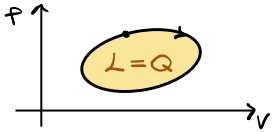
TRASFORMAZIONE	GRAFICO	ΔU	Q	L	LEGGE	ΔS
ISOTERMA ($T = cost$)		0	$Q = L = nRT \ln\left(\frac{V_f}{V_i}\right)$		$pV = cost$	$nR \ln\left(\frac{V_f}{V_i}\right) = nR \ln\left(\frac{p_f}{p_i}\right)$
ISOCORA ($V = cost$)		$\Delta U = Q = nc_v \Delta T$		0	$\frac{p}{T} = cost$	$nc_v \ln\left(\frac{T_f}{T_i}\right) = nc_v \ln\left(\frac{p_f}{p_i}\right)$
ISOBARA ($p = cost$)		$nc_v \Delta T$	$nc_p \Delta T = \Delta H$	$p\Delta V = nR\Delta T$	$\frac{V}{T} = cost$	$nc_p \ln\left(\frac{T_f}{T_i}\right) = nc_p \ln\left(\frac{V_f}{V_i}\right)$
ADIABATICA		$nc_v \Delta T$	0	$-\Delta U = -nc_v \Delta T$	$TV^{\gamma-1} = cost$ $pV^{\gamma} = cost$ $Tp^{\frac{1-\gamma}{\gamma}} = cost$	0 (se reversibile)

- TRASFORMAZIONI CICLICHE: $\Delta U = 0$; $L = Q$



→ $L > 0$ (orario ↻): CICLO TERMICO - MACCHINA TERMICA

$$\eta = \frac{L}{Q_{ASS}} = \frac{Q}{Q_{ASS}} = \frac{Q_{ASS} + Q_{CED}}{Q_{ASS}} = 1 + \frac{Q_{CED}}{Q_{ASS}}$$

→ $L < 0$ (antiorario ↺): CICLO FRIGORIFERO - MACCHINA FRIGORIFERA

$$\varepsilon = \frac{Q_{ASS}}{|L|} = \frac{Q_{ASS}}{|Q_{ASS} + Q_{CED}|}$$

$L < 0$ (lavoro subito); $|Q_{ASS} + Q_{CED}| < 0$

- TRASFORMAZIONI POLITROPICHE: $c = cost \Rightarrow pV^{\alpha} = cost$; $\alpha = \frac{c - c_p}{c - c_v}$

$= \gamma$ ADIABATICA
$= 0$ ISOBARA
$\to +\infty$ ISOCORA
$= 1$ ISOTERMA