

I.

$$|Q| = \oint_{\text{cycle}} T dS$$

diagramme (T, S)

$$W + Q = \Delta U = 0$$

↑
cycle

$$|W| = \oint_{\text{cycle}} p dV$$

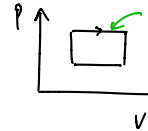
— (p, V)

aires absolues
identiques

• sens de parcours:

$$\curvearrowright W < 0$$

cycle moteur car $\delta W = - p dV$



Carnot :

$$\eta = \frac{-W}{Q_c} = 1 + \frac{Q_F}{Q_c} \leq \underbrace{1 - \frac{T_F}{T_c}}_{\text{réversible}} \equiv \eta_c$$

AN : centrale nucléaire

$$\begin{aligned} T_F &= 200 \text{ K} \\ T_c &= 700 \text{ K} \end{aligned} \rightarrow \eta_c = 57\%$$