



$$W_s = + \int_{V_i}^{V_f} P dv = \text{work done by the gas}$$

$$\Delta E_{th} = n C_v \Delta T$$

$$\Delta E_{th} = Q - W_s \Rightarrow Q = \Delta E_{th} + W_s$$

	ΔE_{th}	W_s	Q
A	-	+	0
B	+	0	+
C	0	-	-