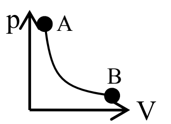
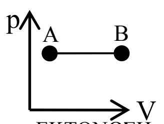
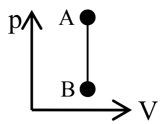
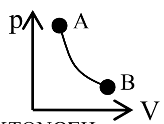
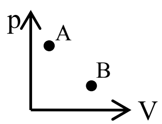
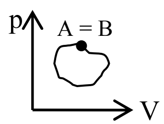
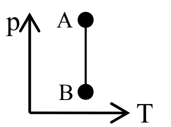
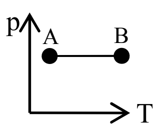
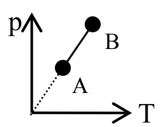
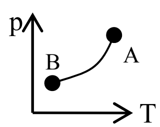
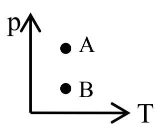
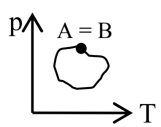
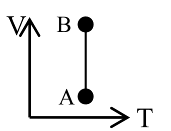
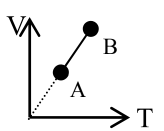
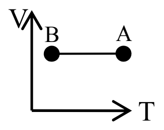
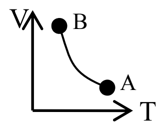
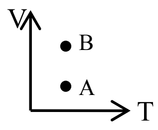
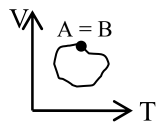
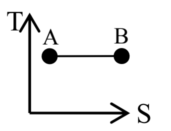
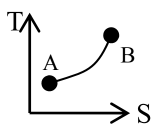
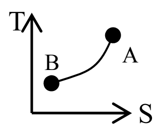
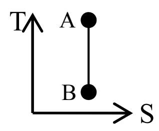
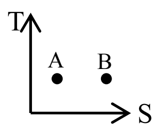
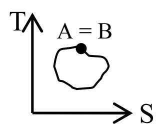
Μεταβολή $A \to B$	Ισόθερμη	Ισοβαρής	Ισόχωρη	Αδιαβατική	Ελεύθερη Εκτόνωση	Κυκλική Μεταβολή
Συνθήκη	$T = \sigma\tau\alpha\theta.$	$p = \sigma\tau\alpha\theta.$	$V = \sigma\tau\alpha\theta.$	$Q = 0$	$T_A = T_B$ $Q = 0$ $W = 0$	$B \equiv A$
Νόμος	$p_A V_A = p_B V_B$	$\frac{V_A}{T_A} = \frac{V_B}{T_B}$	$\frac{p_A}{T_A} = \frac{p_B}{T_B}$	$p_A V_A^{\gamma} = p_B V_B^{\gamma}$ $T_A V_A^{\gamma-1} = T_B V_B^{\gamma-1}$ $p_A^{\gamma-1} T_A^{\gamma} = p_B^{\gamma-1} T_B^{\gamma}$	$\left(\frac{p_A V_A}{T_A} = \frac{p_B V_B}{T_B}\right)$	$\frac{pV}{T} = \sigma\tau\alpha\theta.$
Q	$nRT \ln \frac{V_B}{V_A}$	$nC_p \Delta T$	$nC_V \Delta T$	0	0	Εμβαδό (T – S)
W	$nRT \ln \frac{V_B}{V_A}$	$p\Delta V$ $nR\Delta T$	0	$\frac{p_A V_A - p_B V_B}{\gamma - 1}$	0	Εμβαδό (p – V)
ΔU	0	$nC_V \Delta T$	$nC_V \Delta T$	$nC_V \Delta T$	0	0
1[ος] Θερμ. Νόμος	$Q = W$	$\Delta U = Q - W$	$\Delta U = Q$	$\Delta U = -W$	--------------	$Q = W$
ΔS	$nR \ln \frac{V_B}{V_A}$	$nC_p \ln \frac{T_B}{T_A}$	$nC_V \ln \frac{T_B}{T_A}$	0	$nR \ln \frac{V_B}{V_A}$	0
p – V (Εργο-δεικτικό)	 ΕΚΤΟΝΩΣΗ	 ΕΚΤΟΝΩΣΗ (ΘΕΡΜΑΝΣΗ)	 ΨΥΞΗ	 ΕΚΤΟΝΩΣΗ (ΨΥΞΗ)		
p – T						
V - T						
T – S (Εντρο-πικό)						

Η ονομασία αναφέρεται στη μεταβολή Α → Β. Για την Β → Α: ΕΚΤΟΝΩΣΗ ←→ ΣΥΜΠΙΕΣΗ & ΘΕΡΜΑΝΣΗ ←→ ΨΥΞΗ

$$C_p = C_V + R \qquad \gamma = \frac{C_p}{C_V} \qquad \gamma = \frac{f+2}{f}$$

$$C_V = \frac{R}{\gamma - 1} \qquad C_p = \frac{\gamma}{\gamma - 1} R \qquad C_V = \frac{f}{2} R \qquad C_p = \frac{f+2}{2} R$$

$$T(K) = \theta(^{\circ}C) + 273{,}16 \qquad \text{Κ.Σ.} = (1\,atm, 0^{\circ}C)$$

$$M = (MB)_{gr/mol} = (MB) \cdot 10^{-3}{}_{kg/mol} \qquad V_{mol} = 22{,}4\,L$$

$$n = \frac{N}{N_A} = \frac{m}{M} = \frac{N \cdot m_0}{M}, \quad M = m_0 N_A \qquad k = \frac{R}{N_A}$$

$$\overline{\upsilon} = \frac{1}{N} \sum_j \upsilon_j \qquad \overline{\upsilon^2} = \frac{1}{N} \sum_j \upsilon_j^2 \qquad \upsilon_{rms} = \sqrt{\overline{\upsilon^2}}$$

$$p = \frac{1}{3} \frac{N m_0}{V} \overline{\upsilon^2} = \frac{1}{3} N_1 m_0 \overline{\upsilon^2} = \frac{2}{3} N_1 \overline{E_k} = \frac{1}{3} d \overline{\upsilon^2}$$

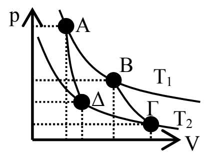
$$N_1 = \frac{N}{V} \qquad \overline{E_k} = \frac{3}{2} kT \qquad \overline{E_k} = \frac{1}{2} m_0 \overline{\upsilon^2}$$

$$d = \frac{m}{V} = \frac{N m_0}{V} \qquad \upsilon_{rms} = \sqrt{\frac{3kT}{m_0}} = \sqrt{\frac{3RT}{M}}$$

$$U = N \cdot \overline{E} = \frac{f}{2} NkT = \frac{f}{2} nRT \qquad \overline{E} = \frac{f}{2} kT$$

$$\Sigma\upsilon\nu\tau.\,\text{Απόδ.} = \frac{\Omega\varphi\acute{\varepsilon}\lambda\iota\mu o\ \acute{\varepsilon}\rho\gamma o}{\Delta\alpha\pi\alpha\nu\acute{\omega}\mu\varepsilon\nu\eta\ \text{Ε}\nu\acute{\varepsilon}\rho\gamma\varepsilon\iota\alpha}$$

$$e = \frac{W}{Q_h} = 1 - \frac{\lvert Q_c \rvert}{Q_h} \qquad e_{\psi} = \frac{1}{\frac{\lvert Q_h \rvert}{\lvert Q_c \rvert} - 1} = \frac{1}{e} - 1 \qquad e_{\alpha} = \frac{1}{1 - \frac{\lvert Q_c \rvert}{\lvert Q_h \rvert}} = \frac{1}{e}$$



$$Q_{AB} = W_{AB} = nRT_1 \ln \frac{V_B}{V_A}$$

$$Q_{\Gamma\Delta} = W_{\Gamma\Delta} = nRT_2 \ln \frac{V_{\Delta}}{V_{\Gamma}}$$

$$W_{B\Gamma} = -W_{\Delta A} = -nC_V (T_2 - T_1)$$

$$Q_h = Q_{AB},\ Q_c = Q_{\Gamma\Delta} \qquad W = W_{AB} + W_{\Gamma\Delta} \qquad \frac{V_A}{V_B} = \frac{V_{\Delta}}{V_{\Gamma}}$$

$$\frac{\lvert Q_h \rvert}{\lvert Q_c \rvert} = \frac{T_1}{T_2} \qquad e_C = 1 - \frac{T_2}{T_1} \qquad e \le e_C$$

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