

Ideal Gas Processes

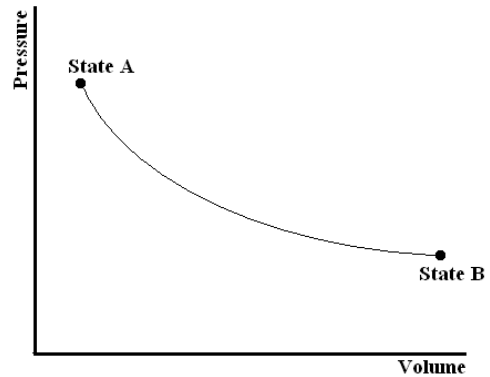
Isotherms (Reversible)

$$P_B = \frac{P_A V_A}{V_B}$$

$$\Delta U = 0$$

$$W = -RT \ln\left(\frac{V_B}{V_A}\right)$$

$$Q = -W$$



Adiabats (Reversible)

$$\gamma = \frac{C_P}{C_V}$$

$$T_B = T_A \left(\frac{V_A}{V_B}\right)^{\gamma-1}$$

$$P_B = P_A \left(\frac{V_A}{V_B}\right)^\gamma$$

$$Q = 0$$

$$\Delta U = C_V (T_B - T_A) \quad \text{const } C_V$$

$$W = \Delta U$$

