

$$PV = Nk_{\text{B}}T$$

$$U = \frac{Nk_{\text{B}}T^2 f'(T)}{f(T)}$$

$$C_V = Nk \frac{2T f(T) f'(T) + T^2 \left\{ f(T) f''(T) - [f'(T)]^2 \right\}}{[f(T)]^2}$$

$$U = n(Nk_{\text{B}}T)$$

$$C_V = n(Nk)$$