Adibideak 1: gas ideala, partikula bereiztezinak

$$Q_N(V,T) = \frac{[Q_1(V,T)]^N}{N!}$$

$$Q_1(V,T) = V f(T)$$

$$\begin{aligned} \mathcal{Q}(z,V,T) &= \sum_{N_r=0}^{\infty} z^{N_r} Q_{N_r}(V,T) = \sum_{N_r=0}^{\infty} \frac{\{zV f(T)\}^{N_r}}{N_r!} \\ &= \exp\{zV f(T)\} \end{aligned},$$

$$q(z,V,T) = zV f(T)$$

$$P = z k_{\mathrm{B}} T f(T)$$

$$N = zV f(T)$$

$$U = zV k_{\mathrm{B}} T^2 f'(T)$$

$$A = N k_{\mathrm{B}} T \ln z - zV k_{\mathrm{B}} T f(T)$$

$$S = -Nk \ln z + zVk\{T f'(T) + f(T)\}$$