$$\Sigma(N,V,E) = \sum_{E' \leqslant E} \Omega(N,V,E')$$

$$\Sigma_N(E^*) = \sum_{E^{*\prime} \leqslant E^*} \Omega_N(E^{*\prime})$$

$$\Sigma_N(E^*) \approx \left(\frac{1}{2}\right)^{3N} \left\{ \frac{\pi^{3N/2}}{(3N/2)!} E^{*3N/2} \right\}$$

$$\Sigma(N,V,E) \approx \left(\frac{V}{h^3}\right)^N \frac{(2\pi mE)^{3N/2}}{(3N/2)!}$$

$$\ln(n!) \approx n \ln n - n \qquad (n \gg 1)$$

$$\ln \Sigma(N,V,E) \approx N \ln \left[\frac{V}{h^3} \left(\frac{4\pi mE}{3N} \right)^{3/2} \right] + \frac{3}{2} N$$