$$\leq_{N}(E^{N}) = \left(\frac{1}{2}\right)^{\frac{3N}{2}} \left\{\frac{\frac{3N}{2}}{\left(\frac{3N}{2}\right)!} \left(E^{N}\right)^{\frac{3N}{2}}\right\}$$

$$E^{x} = \frac{8m}{h^2} V^{2/3} E$$

$$\mathcal{Z}_{N}(E) \cong \left(\frac{V}{h^{3}}\right)^{N} \frac{(27(mE)^{\frac{3N}{2}})!}{\left(\frac{3N}{2}\right)!}$$

$$\sum_{N}(E) \simeq \left(\frac{V}{h^{3}}\right)^{N} \frac{\left(2T(mE)^{\frac{3N}{2}}\right)}{\left(\frac{3N}{2}\right)!} \frac{2N}{3N} = \left(\frac{V}{h^{3}}\right)^{N} \frac{1}{\left(\frac{3N}{2}\right)!} \left(\frac{2T(m)^{\frac{3N}{2}}}{2}\right)! \frac{2N}{2}$$

$$\sum_{N}(E) \simeq \left(\frac{N}{h^{3}}\right)^{N} \frac{1}{\left(\frac{3N}{2}\right)!} \left(\frac{2T(m)^{\frac{3N}{2}}}{2}\right)! \frac{2N}{2}$$

$$\sum_{N}(E) \simeq \left(\frac{N}{h^{3}}\right)^{N} \frac{1}{\left(\frac{3N}{2}\right)!} \frac{2N}{2} = \left(\frac{N}{h^{3}}\right)^{N} \frac{1}{\left(\frac{3N}{2}\right)!} \frac{2N}{2} = \frac{N}{2}$$

$$\cong \frac{3N}{2} \leq_{N} (E) \cdot \frac{1}{E}$$

$$\Gamma_{N}(E;\Delta) \approx \frac{3N}{2} \lesssim_{N}(E) \cdot \frac{1}{E} \cdot \Delta$$

$$(\Delta \ll E) \left(\frac{\Delta}{E}\right) \approx O\left(\frac{1}{N}\right)$$

$$\mathbb{N}(E;\Delta) \approx \frac{3N}{2} \leq_{N}(E) \left(\frac{\Delta}{E}\right)$$



$$\leq_{N(E)} \approx \left(\frac{V}{V^{3}}\right)^{\frac{N}{2}} \frac{(2\pi NE)^{\frac{3N}{2}}}{\left(\frac{3N}{2}\right)!}$$