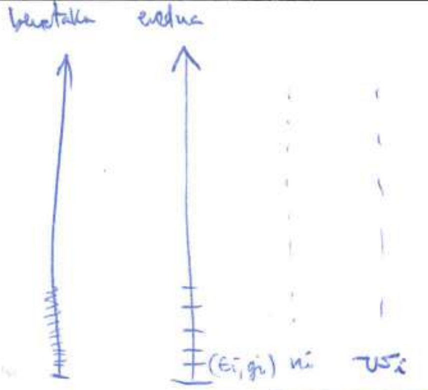
$$W\{n_i\} = \prod_i w(i)$$

hauxe da ondo zenbatuko duguna
bi partikula mota bereiziz



$\boxed{\{n_i\} \quad \prod_i w_i}$ banaketa posible bat $W(\{n_i\})$

$$\boxed{\Omega = \sum{}' W(\{n_i\})}$$

$$w_{BE}(i) = \frac{(n_i + g_i - 1)}{n_i!\,(g_i - 1)}$$ bereiztezin

$$w_{MB}(i) = \frac{(g_i)^{n_i}}{n_i!}$$ bereizgarri
gero bereiztezin
Gibbsen zuzenketa

$$w_{FD}(i) = \frac{g_i!}{n_i!\,(g_i - n_i)!}$$ bereiztezin

$$\sum{}' \left\{ \begin{aligned} W(\{n_i\}) &= \prod_i w_{BE}(i) = \prod_i \left[\frac{(n_i+g_i-1)!}{n_i!\,(g_i-1)}\right] \\ &= \prod_i w_{FD}(i) = \prod_i \left[\frac{g_i!}{n_i!\,(g_i-n_i)!}\right] \\ &= \prod_i w_{MB}(i) = \prod_i \left[\frac{(g_i)^{n_i}}{n_i!}\right] \end{aligned} \right\} \rightarrow \frac{n_i^*}{g_i} = \frac{1}{e^{\alpha + \frac{\epsilon_i}{kT}} + a} = \frac{1}{e^{\frac{(\epsilon_i - \mu)}{kT}} + a} \qquad a = \begin{cases} -1 \\ +1 \\ 0 \end{cases}$$

maximizatu
denak dira oso handiak

$$\boxed{pV = \frac{k_B T}{a} \sum_i \left[g_i \ln\left\{1 + a e^{\frac{(\mu - \epsilon_i)}{k_B T}}\right\}\right]}$$

①