n=3の場合を考える事によって、 $\varepsilon = \frac{T}{3}$

$$\sum_{k=1}^{3} \varepsilon \left\{ \frac{1}{2m} \left[-\frac{i\hbar}{\alpha} \frac{1}{\varepsilon} \frac{\partial}{\partial \chi(k\varepsilon)} - m \frac{\chi(k\varepsilon+\varepsilon)-\chi(k\varepsilon)}{\varepsilon} \right]^2 - \frac{m}{2} \left[\frac{\chi(k\varepsilon+\varepsilon)-\chi(k\varepsilon)}{\varepsilon} \right]^2 \right\} \Phi(\chi(\varepsilon), \chi(2\varepsilon), \chi(3\varepsilon)) = 0$$

$$\sum_{k=1}^{3} \varepsilon \left\{ \frac{1}{2m} \left[-\frac{i\hbar}{\alpha} \frac{1}{\varepsilon} \frac{\partial}{\partial \chi(k\varepsilon)} - m \frac{\chi(k\varepsilon+\varepsilon)-\chi(k\varepsilon)}{\varepsilon} \right]^2 - \frac{m}{2} \left[\frac{\chi(k\varepsilon+\varepsilon)-\chi(k\varepsilon)}{\varepsilon} \right]^2 \right\}$$

$$= \varepsilon \frac{1}{2m} \left[-\frac{i\hbar}{\alpha} \frac{1}{\varepsilon} \frac{\partial}{\partial \chi(\varepsilon)} - m \frac{\chi(2\varepsilon)-\chi(\varepsilon)}{\varepsilon} \right]^2 - \varepsilon \frac{m}{2} \left[\frac{\chi(2\varepsilon)-\chi(\varepsilon)}{\varepsilon} \right]^2$$

$$+ \varepsilon \frac{1}{2m} \left[-\frac{i\hbar}{\alpha} \frac{1}{\varepsilon} \frac{\partial}{\partial \chi(2\varepsilon)} - m \frac{\chi(3\varepsilon)-\chi(2\varepsilon)}{\varepsilon} \right]^2 - \varepsilon \frac{m}{2} \left[\frac{\chi(3\varepsilon)-\chi(2\varepsilon)}{\varepsilon} \right]^2$$

$$+ \varepsilon \frac{1}{2m} \left[-\frac{i\hbar}{\alpha} \frac{1}{\varepsilon} \frac{\partial}{\partial \chi(3\varepsilon)} - m \frac{\chi(4\varepsilon)-\chi(3\varepsilon)}{\varepsilon} \right]^2 - \varepsilon \frac{m}{2} \left[\frac{\chi(4\varepsilon)-\chi(3\varepsilon)}{\varepsilon} \right]^2$$

$$\chi(4\varepsilon) = \chi(\varepsilon)$$