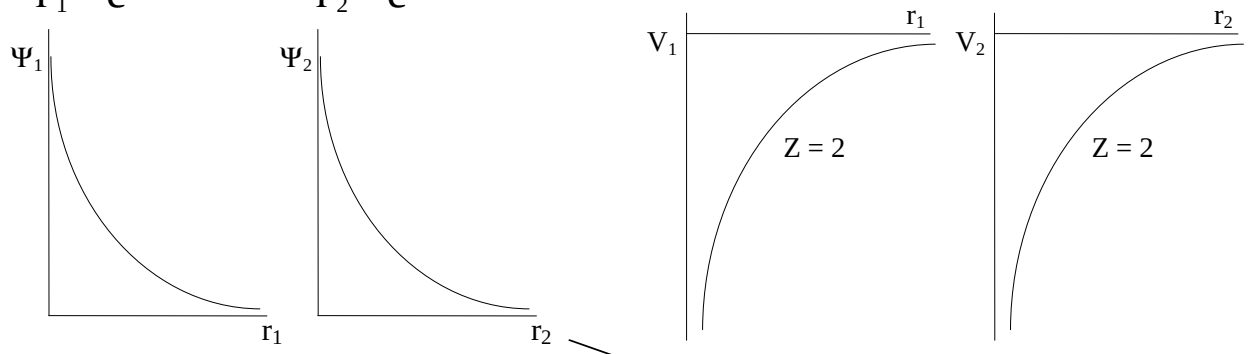
Self-Consistent Field Theory (SCF)

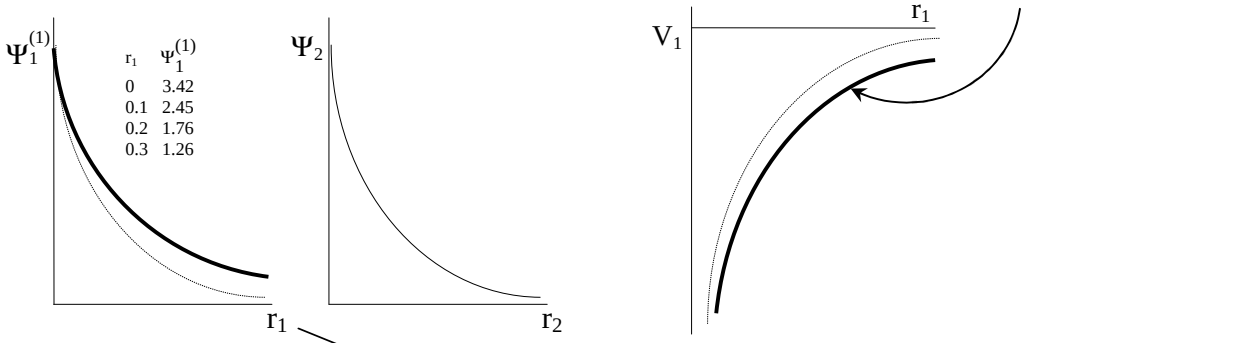
He: $1s^2$

$\Psi_1 = e^{-2r_1/a_o}$ $\Psi_2 = e^{-2r_2/a_o}$



Step 1:

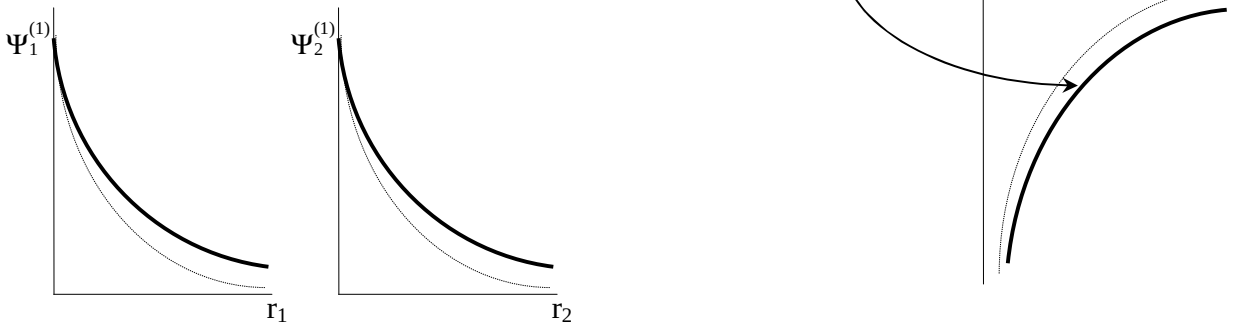
$\Psi_1^{(1)}$ $\Psi_2 = e^{-2r_2/a_o}$ $V_1(r_1) + \int \Psi_2 \frac{e^2}{4\pi\varepsilon_o r_{12}} \Psi_2 \, d\tau_2$



Step 2:

$V_2(r_2) + \int \Psi_1^{(1)} \frac{e^2}{4\pi\varepsilon_o r_{12}} \Psi_1^{(1)} \, d\tau_1$

$\Psi_1^{(1)}$ $\Psi_2^{(1)}$



Repeat until converged: insignificant changes on subsequent iterations