Consider a particle of mass $m$ moving in a one dimensional potential defined by Eq. (2.97) of your text. The electric field $F$ is given by

$$F = v \frac{\hbar^2}{2ma^2},$$

where in our case, $v = 8$ and $a$ represents the bohr radius. Determine the first 3 eigenvalues $E_n$ and eigenfunctions $\psi_n(x)$ of this system. Plot the eigenfunctions for $0 \leq x/a \leq 10$. 