

Assignment 2

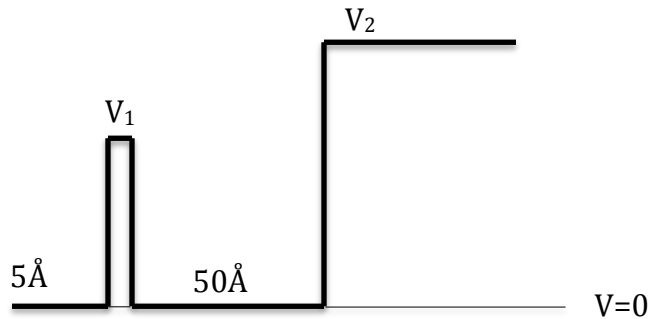
1. Solve the following questions from chapter 2 of the textbook;

2.6, 2.9, 2.10, 2.12, 2.23, 2.25, 2.26, 2.29, 2.33

2. Sketch the state function of an electron traveling in a potential with a function shown in the figure below. Assume:

a) $E < V_1$, V_1 is thin barrier, and electron can tunnel through it.

b) $V_2 > E > V_1$,



3. Consider an electron in a one-dimensional square potential well of width 3 Angstrom, and infinitely high sides. Take $V=0$ inside the well, calculate:
- The lowest three energy levels of the electron.
 - The velocity of the electron in the ground state.
 - The expectation values of the momentum p , and the energy E of electron in the ground state.