Helpful constants for you:

c = 3 108 m/s

e = 1.6 10-19 coulombs

h = 6.63 10-34 J-s

m = 9.1 10-31 kg

kB = 1.38 10-23 J/K

kBT/e = 0.029 V at room temperature

Schroedinger Equation:



Drift-Diffussion:



Fermi-Dirac:



Particle in a box





GaAs: Electron effective mass: 0.067 Hole: 0.45

Fig 2 will be provided from the textbook.