Assignment #2 Wonbin Ju 20182018

The ground state energy of one-dimension infinite potential well was solved numerically and analytically. In the situation, the electron effective mass is 0.19 m_0 and the width of the well is 5 nm. The analytical solution is 0.0793 eV. The numerical solutions are given in Table 1.

Table 1. The ground state energies at different N.

N	Energy (eV)	Error (%)
5	0.0753	5.04
50	0.0792	0.126
500	0.0793	0

The results suggest that as the N increases, the numerical solution similar to the analytical solution. At N=500, the numerical solution is the same as the analytical solution within three significant figures.