

19. According to Fig. 40-9, the electron's initial energy is 109 eV . After the additional energy is absorbed, the total energy of the electron is $109\text{ eV} + 400\text{ eV} = 509\text{ eV}$. Since it is in the region $x > L$, its potential energy is 450 eV (see Section 40-5), so its kinetic energy must be $509\text{ eV} - 450\text{ eV} = 59\text{ eV}$.