

HW.7

6.15 $R = 0.00704$

6.18 (a) $\psi_{\text{refl}} = 1/3 e^{-ikx}$, $\psi_{x>0} = 4/3 e^{ikx}$
(b) $1/9$

6.24 (a) $L = 1.0981$ [nm], (b) $R = 0.475$

6.28

Because the substitution changes the wave functions, which are really the starting point, for the $E > U_0$ barrier to those for tunneling.

6.36

(a) 10^{52} [sec] or 10^{44} [year].

(b) 7.9 [MeV]

(c) We see what we're up against. A change of roughly a factor of 2 in our model potential energy alters the mean life by more than thirty orders of magnitude.