Phys 242 Homework

Problem Set 8

Due Wednesday, November 1

1. Thornton and Rex 6.25

2. Thornton and Rex 6.32

3. Thornton and Rex 6.45. Also rank the three processes from high to low in terms of the transmission coefficient.

4. Thornton and Rex 6.49

5. Thornton and Rex 6.50 **except** find the ground state energy for a well with $V_0 = \frac{4\hbar^2}{2mL^2}$ (Hint: Let $\alpha = kL$ and $\beta = \kappa L$. Find $\alpha^2 + \beta^2$ and then use the results of 6.49.)

6. What are the energy levels of a particle of mass m moving in the following one dimensional well

   $V(x) = \infty$ for $x < 0$

   $V(x) = 1/2kx^2$ for $x > 0$

   You shouldn't need to do any calculations.