Phys 242 Homework

Problem Set 9

Due Wednesday, November 22

1. Thornton and Rex 8.4
2. Thornton and Rex 8.5. Do the first 3 elements only. Try to do these without looking at the answer. The problem should read use Figure 8.1 instead of use Figure 8.2.
3. Thornton and Rex 8.12
4. Thornton and Rex 8.14
5. Consider two particles in an infinite potential well of width L.

   a. What are the values of the two lowest energies of the system?

   b. What are the degeneracies of these energies if the particles are not identical?

   c. What are the degeneracies of these energies if the particles are identical and have spin 1/2? Write out the full wave function(s) of the first excited state.

   d. What are the degeneracies of these energies if the particles are identical and have spin 0?

There was a request to list other relevant problems in Thorton and Rex. These are 8.16, 8.19, and 8.29a. These do not have to handed in.