

1. Chapter 6, Problem 23 (page 230).
2. a) Chapter 6, Problem 24 (page 230).  
b) Chapter 6, Problem 25 (page 230).
3. Chapter 6, Problem 32 (page 231).
4. Chapter 7, Problem 6 (page 263).
5. Chapter 7, Problem 13 (page 263).
6. **20 points extra credit:** On Thursday February 25 we discussed in class how to use Mathematica to solve the Schrödinger equation for a particle in a finite well. However, the notebook I used (which is available from the Physics 237 website) is not complete and does not predict the energy eigenvalues of the solutions.
  - a. For  $V_0 = 12$  and  $a = 1$  there are four eigenvalues. Update the notebook to include the calculation of these four energies.
  - b. Update the Mathematica notebook to create four graphs that show the eigenfunctions as function of position.

In order to receive the extra credit, you should create a Mathematica Notebook, showing on the relevant calculations and graphs, and submit it electronically to Prof. Wolfs at [wolfs@pas.rochester.edu](mailto:wolfs@pas.rochester.edu). The name of the file should be hw06p06XXYYYYYYYY.nb where XX are your initials and YYYYYYYY is your student id number. The subject of the email should start with hw06p06XXYYYYYYYY.