

Physics 244
Modern Physics
Homework 3

Due in Class Friday, September 28, 2007

1. Thornton and Rex Chapter 6 problem 10
2. Thornton and Rex Chapter 6 problem 15 (answer in back – try it before looking!)
3. Thornton and Rex Chapter 6 problem 18
4. Thornton and Rex Chapter 6 problem 22
5. Sketch the (a) wavefunction and (b) the probability distribution for the $n=4$ state of the finite square well potential.
6. Find (a) $\langle x \rangle$ and (b) $\langle x^2 \rangle$ for the second excited state ($n = 3$) in an infinite square well potential.

“Science cannot solve the ultimate mystery of nature. And that is because, in the last analysis, we ourselves are a part of the mystery that we are trying to solve.” Max Planck (1858–1947)

