

# Physics 471 – Fall 2009

## Homework #10, due Wednesday, November 25

0. [0] Look at Griffiths problem 4.1. I won't ask you to do it, because it's boring, but you will be responsible for knowing these results on the final exam!
1. [5] Griffiths problem 4.2. For part (b), make a table with the following columns: energy level,  $n_x$ ,  $n_y$ ,  $n_z$ ,  $\sum_j n_j^2$ , degeneracy. For the energy levels that are degenerate, you don't have to put a separate row in your table for every possible combination of  $n_x$ ,  $n_y$ , and  $n_z$  that leads to the same energy, if it's obvious. But if it's not obvious, then go ahead and do so. Part (b) only asks you to extend your table down to the 6<sup>th</sup> energy level, but to do part (c), you'll have to extend it all the way to the 14<sup>th</sup> level!
2. [6] Griffiths problem 4.19.
3. [4] Griffiths problem 4.18.
4. [5] Redo completely and correctly one of the problems from the second midterm. For your own benefit, choose the problem that you did worse on when you took the exam. If you got a perfect score on the exam, say so and skip this problem.