

Physics 471 – Fall 2009

Homework #1, due Friday, September 11

(each problem is worth 4 points)

1. Do problems 1-7 from Section 1 (Complex Numbers) of the Math Review sheet. Note that θ is real in problem 3. We will only grade a subset of these problems, but I want you to do all of them.
2. Griffiths problem 1.1. This problem is a bit tedious, but it is important to make sure you understand how to deal with discrete probability distributions. If you want, you may use a spreadsheet program such as Excel to do this. You may NOT use any of the statistical features in Excel. Instead, put the data into the following columns:

1st column: the j values (ages)

2nd column: $N(j)$ = number of occurrences of each age

3rd column: $P(j)$ = probability of finding the age j

Then you may add any additional columns you wish to facilitate the calculations. Write down on the spreadsheet printout what formulas you used to do the calculations. If the grader can't follow your work, you won't get full credit.

If you anticipate that doing this problem in Excel will take more time than doing it by hand, then by all means do it by hand!

3. Griffiths problem 1.3. The Gaussian integrals you need are on the inside back cover of Griffiths. Use symmetry whenever you can. For example, what is the integral from minus infinity to infinity of an odd function?
4. Griffiths problem 1.4, parts (a)-(d) only
5. Griffiths problem 1.5