PHYS 391, Homework #2
Due Thursday, January 29, by noon.

Key Concepts

- Mean, Standard Deviation
- Standard Deviation of the Mean
- Gaussian Distribution

Reading: Taylor Chapters 4-5

Homework Problems (taken from Taylor):

1. Problem 4.12
2. Problem 4.18
3. Problem 4.22 - If you wish, you should feel free to use MATLAB or a spreadsheet to make this problem less tedious. I don't need to see you work this stuff out by hand on paper. Please describe, however, what you used in your solution.
4. Problem 4.26 - Similarly, here you can use MATLAB to make this easier (although this may be just as quick to do "by hand")
5. Problem 5.12
6. Problem 5.21 - Either use the tables in the back of the book, or use the MATLAB `erf(x)` function. If you use the MATLAB function, check very carefully the function definition (with `help erf` or `doc erf`) and compare with Eqn. 5.35 in Taylor.
7. Problem 5.25
8. Problem 5.28 - Remember, percent usually indicates a relative uncertainty.
9. Problem 5.36 - The phrase "at the 5% level" sets the threshold in this problem where a low probability is deemed "unlikely" and hence the results are inconsistent. Note that this is always an arbitrary distinction.