Just the Basics
for Stat 185

On our final exam, there will be a "basics" section consisting of three problems. Those three problems will be very much like the problems below but with different numbers. If you can do those three problems - nearly perfectly, then you will pass this class.

1. Suppose we randomly select 400 college students and measure their heights in feet. We find that our data has an average of 5.9 with a standard deviation of 0.42. We wish to write down a 98% confidence interval for this data.

    (a) Find the standard error associated with this sample.

    (b) Use a normal table to find the z^* value that corresponds to a 98% confidence interval.

    (c) Write down a 98% confidence interval for the average height of college students based on this data.

2. Suppose we randomly select 4 college students, measure their heights in feet and find them to be

5.9	5.5	6.0	6.1

    (a) Write down a formula showing that the mean of these heights is 5.875.

    (b) Write down a formula showing that the standard deviation of these heights is approximately 0.263

    (c) Find the standard error associated with this sample.

    (d) Write down a 95% confidence interval for the average height of college students based on this data.

3. Supposedly, approximately 10% of the population is left handed, but we think it might be higher than that. Suppose that in a random sample of 75 people, we find 12 left handers. Let's use this data to explore the question of whether the 10% estimate is truly correct vs whether there might be more than 10%.

    (a) Write down the Null and Alternative Hypotheses for this problem.

    (b) Compute the standard error, test statistic, and p-value.

    (c) State the conclusion of the hypothesis test and your reasons why.