Homework 1

Part 1:

1. Briefly, in your own words, why is it advantageous to know a statistic's sampling distribution?
2. What is the distinction between a sampling distribution and the broader definition of a probability distribution?
3. What is the distinction between the term standard error and the broader definition of standard deviation?
4. Talk to at least one person about setting up a study group. Tell me who you talked to about a study group.

Part 2: Casella & Berger Problems

1. Review Theorem 2.1.8 (you do not need to turn in anything for this problem)
2. Review the multivariate change of variables discussed in Section 4.6. In particular, review the result and assumptions needed for equation 4.6.7 (you do not need to turn in anything for this problem)
3. Complete the proof of Lemma 5.3.2
4. Complete Exercise 5.3.
5. Complete Exercise 5.6.
6. Complete Exercise 5.11. What does this say about the sample standard deviation as an estimator of the true standard deviation?