

I. **Sections to Read** (All content from DeGroot and Schervish's *Probability and Statistics* unless otherwise noted) A digital copy of the textbook is available for on our class PWeb site, under the Day One Access tab.

- (a) Section 12.6 (just pages 841 - 845; the sections titled **The Bootstrap in General** and **The Nonparametric Bootstrap**)

II. **Objectives** (By the end of the day's class, students should be able to do the following:)

- Explain the difference between the bootstrap estimates and simulation approximations of bootstrap estimates.
- Use simulation to create approximations of bootstrap estimates.
- Construct approximate confidence intervals for parameters using an approximation to the bootstrap distribution.
- Discuss the difference between the **percentile** and **percentile- t** confidence interval.

III. **Reflection Questions** (Submit answers on Gradescope <https://www.gradescope.com>)

- 1) In your own words, briefly describe the difference between a *bootstrap estimate* and a *simulation approximation of a bootstrap estimate*.
- 2) When approximating the bootstrap estimate of the M.S.E of the sample median (as in Example 12.6.3), what affect will increasing the number of bootstrap samples 10,000 to 20,000 have on the approximation?
- 3) When approximating the bootstrap estimate of the M.S.E of the sample median (as in Example 12.6.3), explain why it would be inappropriate to change the sample size from 25 to some other value (for example, to 1000).

IV. **Additional Feedback** Are there any topics you would like further clarification about? Do you have any additional questions based on the readings / videos? *If not, you may leave this section blank.*