

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 7.4

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

- State the definition of a Bayes estimator, discuss its properties, and explain its dependence on the choice of loss function and prior distribution.
- Provide examples of loss functions and compute or approximate the Bayes Estimator for a given loss function.
- Give the definition of a consistent estimator and describe what such an estimator represents in everyday language.

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

- 1) True or False? In the Bayesian framework, the expected loss $E[L(\theta, a)]$ is a function of the estimate a , but not the parameter θ .
- 2) Let X and Y be a random variables. Briefly describe the difference between $E[Y|X]$ and $E[Y|X = x]$.
- 3) Briefly explain why *consistency* is a desirable trait to have in a sequence of estimators.

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.*