Pre-class preparation

Please read the following textbook sections from Degroot and Schervish's *Probability and Statistics* (fourth edition) or watch the video, as indicated:

- Textbook: 7.1 (Statistical Inference)

Objectives

By the end of the day's class, students should be able to do the following:

- Discuss important differences between Probability and Mathematical Statistics.
- Identify the random variable(s), statistical model, unknown parameter(s) and the parameter space in a given problem.
- Provide the definition and examples of a statistic.

Reflection Questions

Please submit your answers to the following questions to the corresponding Canvas assignment by 8:45AM:

1. A summary of Example 5.2.6 from the textbook: In the court case of *Castaneda v. Partida*, a local population was 79.1% Mexican American. During a 2.5 year period, 220 local residents were called to serve on grand juries, but only 100 of the 220 were Mexican Americans. The claim was made that this was evidence of discrimination against Mexican Americans in the grand jury selection process.

   Suppose that the members of the local population are independently selected for grand jury duty, where Mexican Americans are selected to be jurors with probability p. Let X represent the number of jurors during this 2.5 year period who identified as Mexican American. Identify the following:

   - The random variable(s)
   - The implied statistical model for the random variable(s)
   - The unknown parameter(s)
   - The parameter space
   - The observed data (i.e. the realization of the random variable)
   - A statistic that we could calculate from this statistical model.

2. (Optional) Is there anything from the pre-class preparation that you have questions about? What topics would you like would you like some more clarification on?