0.5: Practice Questions (Ungraded)

The pdf below contains some practice questions based on the review material in Topics 0.2, 0.3, and 0.4. The solutions are also provided for you to self-grade.

While doing well on the practice questions is no guarantee of success in this class, not doing well is almost a guarantee of struggle in the class.

My recommendation: If you are confident about confidence intervals and hypothesis testing and want a confirmatory exercise, try working on questions 6, 7, 14, 15, 16. If you can do these questions without breaking a sweat, you probably are good to go. If these questions are a struggle for you, you should review the material in Module 0.

Given the accelerated nature of this course, finding out that you need to review module 0 AFTER the official start of the course is probably too late.

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Stat 6021: Homework Set 0

Topic 1: Sampling Distributions

1. Statistical theory tells us the distribution of the sample means with a fixed sample size, under certain circumstances. The sampling distribution is an approximation of the density histogram of the sample means. We know the sample means vary from sample to sample. The sampling distribution tells us the expected value (mean) of the distribution, and the standard deviation of the sample means.

   (a) Suppose the variable X follows a normal distribution with mean μ and standard deviation σ. Consider taking random samples, each with size n, repeatedly. What is the sampling distribution of the sample mean, $\bar{x}$?

   (b) Suppose the variable X has an unknown distribution but known mean μ and known standard deviation σ. What is the name of the statistical theory that informs us that the sampling distribution of the sample mean, $\bar{x}$, can be well-

Solutions to Practice Questions