

Instructions

Due Week 11 · Friday, November 6

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Complete the following problems and upload your answers as a PDF file to **Blackboard**. Upload your .do file as well.

Reminder: the `sample` command in Stata draws random samples from data in memory, with the number after `sample` referring to the size of the sample to draw. (So, for instance, the command `sample 10` would draw a 10% sample of the dataset.) The dataset `protectedlands2022.dta` gives the distribution of all protected lands across all countries in the world in the year 2022. For all questions, round to the nearest hundredth.

Questions

1. Find the mean and standard deviation of protected lands in the population.
2. Draw a 40% sample of countries from the dataset. What is the mean and standard deviation of this sample?
3. Calculate 20%, 50%, 80%, 90%, 95%, and 99% confidence intervals for the mean of the sample.
4. Do each of the confidence intervals contain the true population mean? Are you surprised?
5. What is the proper interpretation for each of the confidence intervals you calculated above?