STAT 113: EIGHTEEN QUESTIONS REVIEW

Sampling Distributions.

1. The "cases" that make up a sampling distribution are _____

2. (a) If we are interested in estimating or testing a hypothesis about a population mean, we should investigate the sampling distribution of what variable?

   (b) What if we are interested in a population proportion?

   (c) A difference of population means?

   (d) A population correlation?

3. The **standard error** of the population parameter is the _____ of the _____.

4. A similar statement holds for some other statistics/parameters, as long as the sampling distribution is _____.

Confidence Intervals.

5. Which of the following are valid interpretations of what confidence intervals mean? (Circle all that apply)
   (a) We can be 93% confident that the population parameter falls in the 93% confidence interval.
   (b) 93% CIs contain 93% of the cases in the population.
   (c) 93% CIs contain 93% of the cases in the sample.
   (d) 93% of 93% CIs contain the population parameter.
   (e) 93% of samples have a statistic that falls in the 93% CI.

6. To construct a **bootstrap distribution**, we let the _____ stand in for the _____, and draw samples from it, being sure to _____ after each observation is drawn. We then compute the statistic of interest for each sample. The collection of these statistics form the bootstrap distribution.

7. We use bootstrap distributions in order to construct _____.

8. Bootstrap distributions are centered at the _____.

9. The standard deviation of the boostrap distribution can be used as an estimate of _____.

10. We can get the endpoints of a 94% confidence interval using a bootsrap distribution using the _____ percentile and the _____ percentile of the distribution.

11. Name two factors that affect the width of a confidence interval, and indicate the direction of the relationship.

Hypothesis Testing.

12. Both H_0 and H_1 are statements about characteristics of _____.

13. To test hypotheses, we construct **randomization distributions**. These represent hypothetical outcomes of a study, assuming that _____ is true.

14. Randomization distributions are typically centered at _____.

15. This stands in contrast to bootstrap distributions, which are typically centered at _____.

16. The P-value represents the chance that we get a _____ at least as convincing for the _____ as the _____ assuming that _____ is true.

17. We reject H_0 when the P-value is _____ compared to the _____. When this happens we say the evidence against H_0 is _____.

18. We can calculate the P-value via simulation using a _____ distribution, and finding the proportion of _____ in the distribution that would have been as or more more convincing as the _____