

Post-Break Review Questions: The Big Picture

1. What does *statistically significant* mean?

The result is not likely to be due to chance.

2. What is the difference between a *population* and a *sample*?

A population is the entire group of interest. A sample is a subset of the population small enough to be studied.

3. What is the difference between a *parameter* and a *statistic*?

A parameter is a variable defined for a population. A statistic is a variable defined for a sample.

4. What is *statistical inference*?

Statistical inference is the process of reaching conclusions about a population based on data from a sample.

5. What are the *two types of inference* we have studied in this course?

Confidence intervals and significance tests

6. What is a *level C confidence interval*?

A level C confidence interval is a range of values produced by a method that has probability C of producing intervals that contain the true value of the parameter in question.

7. What are *null and alternative hypotheses*?

A null hypothesis is a statement that the parameter in question has a specific value. An alternative hypothesis is the statement that the parameter in question does not have that specific value.

8. What is a *test statistic*?

A test statistic is the (standardized) difference between the sample statistic value from data and the null hypothesis value for the parameter.

9. What is a *p-value*?

A p-value is the probability of getting a test statistic value as extreme or more extreme than the statistic value from data, under the assumption that the null hypothesis is true.