Biostatistics

Archive

Lecture 7

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1. In inferential statistics, if an estimator is calculated from a sample, which of the following statements is true about its relationship to the population?
A) It provides an exact measure of the population parameter.
B) It serves as a point estimate but may vary with different samples.
C) It cannot be used to infer information about the population.
D) It is always biased and hence unreliable.

Answer:B. It serves as a point estimate but may vary with different samples.

2. Which of the following measures of central tendency is least affected by extreme values in a dataset?
A) Mean
B) Median
C) Mode
D) All three measures are equally affected.

Answer:B. Median

3. When constructing a histogram, which of the following shapes indicates a positively skewed distribution?
A) Symmetrical bell-shaped
B) Uniform distribution
C) Longer tail on the right
D) Longer tail on the left

Answer: C) Longer tail on the right

4. Given a sample data set: 6, 3, 8, 6, 4, if one data point is increased significantly (e.g., to 40), how would this affect the sample mean?
A) It would decrease significantly.
B) It would remain unchanged.
C) It would increase significantly.
D) It would be impossible to determine.

Answer: C) It would increase significantly.

5. In the context of standard deviation, which of the following statements is correct regarding its interpretation in a normal distribution?
A) 99.7% of the data falls within three standard deviations of the mean.
B) The standard deviation can be negative.
C) Approximately 50% of the data falls above the mean.
D) The standard deviation is always equal to the mean.

Answer: A) 99.7% of the data falls within three standard deviations of the mean.