



# Biostatistics



## Archive



## Lecture 4



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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.**

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