

Statistics and Probability Fundamentals

Mathematics · Answer Key · 10 Questions

1. What is the term for the value that appears most frequently in a data set?

- A) Mean
- B) Median
- C) Mode**
- D) Range

2. In a perfectly symmetrical normal distribution, what is the relationship between the mean, median, and mode?

- A) Mean is greater than median
- B) They are all equal**
- C) Mode is the highest value
- D) Median is the smallest value

3. Which measure of dispersion is calculated as the square root of the variance?

- A) Standard deviation**
- B) Interquartile range
- C) Mean absolute deviation
- D) Coefficient of variation

4. What is the sum of the probabilities of all possible mutually exclusive outcomes in a sample space?

- A) 0
- B) 0.5
- C) 1**
- D) 100

5. Which term describes the measure of the 'tailedness' or the distribution of extreme values in a dataset?

- A) Skewness
- B) Kurtosis**
- C) Variance
- D) Covariance

6. What is the probability of flipping a fair coin three times and getting heads each time?

- A) $\frac{1}{2}$
- B) $\frac{1}{4}$
- C) $\frac{1}{6}$
- D) $\frac{1}{8}$**

7. The 'Law of Large Numbers' states that as the number of trials increases, the sample mean will converge to what?

- A) The range
- B) The expected value**
- C) The median
- D) The standard deviation

8. What is the definition of the 'interquartile range' (IQR)?

- A) Difference between max and min
- B) Difference between Q3 and Q1**
- C) Average of all values
- D) The range of the middle 50%

9. Which statistical theorem states that the distribution of sample means will be approximately normal regardless of the population distribution, given a large enough sample size?

- A) Bayes' Theorem
- B) Central Limit Theorem**
- C) Law of Total Probability
- D) Chebyshev's Inequality

10. In a box plot, what does the line drawn inside the box typically represent?

- A) The mean
- B) The median**
- C) The mode
- D) The first quartile