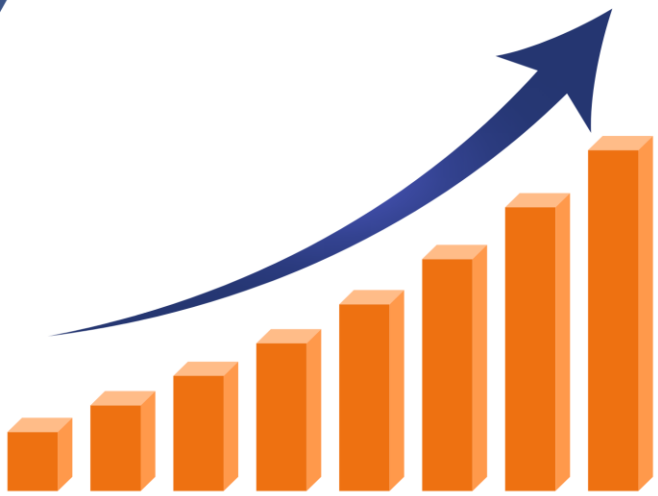
iNeuron



Statistics

11. If the mean and median of a dataset are equal, what can you infer about the data distribution?

a. The distribution is symmetrical
b. The distribution is skewed to the left
c. The distribution is skewed to the right
d. No inference can be made
Ans. a) The distribution is symmetrical

12. Which of the following statements about the geometric mean is true?

a. It is sensitive to extreme values.
b. It is suitable for datasets with negative values.
c. It is the average of the logarithmic values.
d. It is equivalent to the arithmetic mean.
Ans. c) It is the average of the logarithmic values.

13. What is the primary drawback of using the mode as a measure of central tendency?

a. It is sensitive to extreme values.
b. It may not exist or be unique.
c. It cannot be calculated for continuous data.
d. It is difficult to interpret.
Ans. b) It may not exist or be unique.

14. What does the 50th percentile represent in a dataset?
a. Mean
b. Median
c. Mode
d. Range
Ans. b) Median

15. Which of the following is a measure of statistical dispersion?

a. Median
b. Quartiles
c. Percentile
d. Interquartile Range (IQR)
Ans. d) Interquartile Range (IQR)

16. What is the formula for calculating the interquartile range (IQR)?

a. IQR = Q3 - Q1
b. IQR = Q2 - Q1
c. IQR = Q3 – Median
d. IQR = Range / 2
Ans. a) IQR = Q3 - Q1

17. If a dataset has three quartiles, how many percentiles does it have?

a. 3
b. 4
c. 5
d. 6
Ans. b) 4

18. What does the third quartile (Q3) represent in a dataset?

a. Median
b. 75th percentile
c. Upper 25%
d. Maximum value
Ans. b) 75th percentile

19. In a positively skewed distribution, where is the mean located in relation to the median and mode?

a. Mean > Median > Mode
b. Mean < Median < Mode
c. Mean = Median = Mode
d. Mean > Median < Mode
Ans. a) Mean > Median > Mode

20. What is skewness in a statistical distribution?

a. Measure of symmetry
b. Measure of spread
c. Measure of central tendency
d. Measure of asymmetry
Ans. d) Measure of asymmetry

21. If skewness is negative, what does it indicate about the distribution?

a. Skewed to the right
b. Symmetrical
c. Skewed to the left
d. Uniform distribution
Ans. c) Skewed to the left

22. Which skewness value indicates a perfectly symmetrical distribution?
a. 0
b. 1
c. -1
d. 0.5
Answer: a. 0

23. What does a skewness value of -2 suggest about a distribution?

a. Mild leftward skewness
b. Moderate leftward skewness
c. Strong leftward skewness
d. Perfect symmetry
Ans. c) Strong leftward skewness

24. What does the 25th percentile represent in a dataset?

a. First quartile (Q1)
b. Median
c. Second quartile (Q2)
d. Third quartile (Q3)
Ans. a) First quartile (Q1)

25. If a distribution is perfectly symmetrical, what is the skewness value?

a. 0
b. 1
c. -1
d. Depends on kurtosis
Ans. a) 0

26. In a distribution with positive skewness, where is the mean located in relation to the median?

a. Mean > Median
b. Mean < Median
c. Mean = Median
d. Cannot determine
Ans. a) Mean > Median

27. What is the second quartile equivalent to in terms of percentiles?
a. 25th percentile b. 50th percentile
c. 75th percentile d. 100th percentile
Ans. b) 50th percentile

28. What is the primary difference between quartiles and percentiles?

a. Quartiles divide data into 25 parts; percentiles into 100 parts
b. Quartiles are for continuous data; percentiles for discrete data
c. Quartiles are always integers; percentiles can be fractions
d. Quartiles divide data into four parts; percentiles into 100 parts
Ans. d) Quartiles divide data into four parts; percentiles into 100 parts

29. What does a positive kurtosis value suggest about a distribution?

a. Heavy-tailed distribution
b. Light-tailed distribution
c. Normal distribution
d. Perfect symmetry
Ans. a) Heavy-tailed distribution

30. How is the 75th percentile related to the third quartile (Q3)?

a. They are equal
b. 75th percentile < Q3
c. 75th percentile > Q3
d. Their relationship depends on the data distribution
Ans. a) They are equal

31. In a positively skewed distribution, what is the relationship between the mean, median, and mode?

a. Mean = Median = Mode
b. Mean > Median > Mode
c. Mean < Median < Mode
d. Mode is not affected by skewness

Ans. b) Mean > Median > Mode