

STATISTICS WORKSHEET-3

Q1 to Q9 have only one correct answer. Choose the correct option to answer your question.

1. Which of the following is the correct formula for total variation?
- a) Total Variation = Residual Variation – Regression Variation
 - b) Total Variation = Residual Variation + Regression Variation
 - c) Total Variation = Residual Variation * Regression Variation
 - d) All of the mentioned

Answer – b)

2. Collection of exchangeable binary outcomes for the same covariate data are called _____ outcomes.
- a) random
 - b) direct
 - c) binomial
 - d) none of the mentioned

Answer – c)

3. How many outcomes are possible with Bernoulli trial?
- a) 2
 - b) 3
 - c) 4
 - d) None of the mentioned

Answer – a)

4. If H_0 is true and we reject it is called
- a) Type-I error
 - b) Type-II error
 - c) Standard error
 - d) Sampling error

Answer – a)

5. Level of significance is also called:
- a) Power of the test
 - b) Size of the test
 - c) Level of confidence
 - d) Confidence coefficient

Answer – b)

6. The chance of rejecting a true hypothesis decreases when sample size is:
- a) Decrease
 - b) Increase
 - c) Both of them
 - d) None

Answer – a)

7. Which of the following testing is concerned with making decisions using data?
- a) Probability
 - b) Hypothesis
 - c) Causal
 - d) None of the mentioned

Answer – b)

8. What is the purpose of multiple testing in statistical inference?
- a) Minimize errors
 - b) Minimize false positives

- c) Minimize false negatives
- d) All of the mentioned

Answer – d)

9. Normalized data are centred at_____and have units equal to standard deviations of the original data

- a) 0
- b) 5
- c) 1
- d) 10

Answer – a)

Q10and Q15 are subjective answer type questions, Answer them in your own words briefly.

- 10. What Is Bayes' Theorem?
- 11. What is z-score?
- 12. What is t-test?
- 13. What is percentile?
- 14. What is ANOVA?
- 15. How can ANOVA help?

Answer – 10)

Bayes' theorem describes the probability of occurrence of an event related to any condition. It is also considered for the case of conditional probability. Bayes theorem is also known as the formula for the probability of “causes”.

Answer – 11)

A z score is simply defined as the number of standard deviation from the mean. The z-score can be calculated by subtracting mean by test value and dividing it by standard value. Where x is the test value, μ is the mean and σ is the standard value.

Answer – 12)

The t-test is a test that is mainly used to compare the mean of two groups of samples. It is meant for evaluating whether the means of the two sets of data are statistically significantly different from each other

Answer – 13)

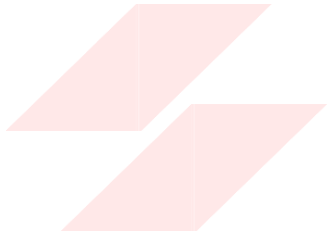
A percentile is a term used to describe and interpret data distributions. The nth percentile describes the percentage of data below that percentile

Answer – 14)

Analysis of variance (ANOVA) is an analysis tool used in statistics that splits an observed aggregate variability found inside a data set into two parts: systematic factors and random factors. The systematic factors have a statistical influence on the given data set, while the random factors do not. Analysts use the ANOVA test to determine the influence that independent variables have on the dependent variable in a regression study

Answer – 15)

ANOVA is helpful for testing three or more variables. It is similar to multiple two-sample t-tests. However, it results in fewer type I errors and is appropriate for a range of issues. ANOVA groups differences by comparing the means of each group and includes spreading out the variance into diverse sources.



FLIP ROBO