Statistics Worksheet-3

FlipRobo

Q1 to Q9

1. (b) Total Variation = Residual Variation + Regression Variation
2. (c) binomial
3. (a) 2
4. (a) Type-I error
5. (b) size of the test
6. (b) Increase
7. (b) Hypothesis
8. (d) All of the mentioned
9. (a) 0

Q10 to Q15

10. What Is Bayes' Theorem?

Ans. Bayes' Theorem states that the conditional probability of an event, based on the occurrence of another event, is equal to the likelihood of the second event given the first event multiplied by the probability of the first event.
Bayes' Theorem calculates the conditional probability of an event, based on the values of specific related known probabilities. Bayes Theorem provides a useful method for thinking about the relationship between a data set and a probability.

11. What is z-score?

Ans. Z-score indicates how much a given value differs from the standard deviation. The Z-score, or standard score, is the number of standard deviations a given data point lies above or below mean. Standard deviation is essentially a reflection of the amount of variability within a given data set. A Z-score is a numerical measurement that describes a value's relationship to the mean of a group of values.

12. What is t-test?

Ans. The t test is usually used when data sets follow a normal distribution but you don't know the population variance. For example, you might flip a coin 1,000 times and find the number of heads follows a normal distribution for all trials. t-test is an inferential statistic used to determine if there is a significant difference between the means of two groups and how they are related.

13.What is percentile?

Ans. A percentile is a comparison score between a particular score and the scores of the rest of a group. It shows the percentage of scores that a particular score surpassed. For example, if you score 75 points on a test, and are ranked in the 85 th percentile, it means that the score 75 is higher than 85% of the scores.

14. What is ANOVA?

Ans. Analysis of Variance (ANOVA) is a statistical formula used to compare variances across the means (or average) of different groups. A range of scenarios use it to determine if there is any

difference between the means of different groups. is a statistical method that separates observed variance data into different components to use for additional tests.

15. How can ANOVA help?

Ans. 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. It provides the overall test of equality of group means. It can control the overall type I error rate (i.e. false positive finding) It is a parametric test so it is more powerful, if normality assumptions hold true.