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?

Ans=a) Total Variation = Residual Variation – Regression Variation

1. Collection of exchangeable binary outcomes for the same covariate data are called \_\_\_\_\_\_\_ outcomes.

Ans=c) binomial

1. How many outcomes are possible with Bernoulli trial?

Ans=a) 2

1. If Ho is true and we reject it is called

Ans=a) Type-I error

1. Level of significance is also called:

Ans=d) Confidence coefficient

1. The chance of rejecting a true hypothesis decreases when sample size is:

Ans=a) Decrease

1. Which of the following testing is concerned with making decisions using data?

Ans=b) Hypothesis

1. What is the purpose of multiple testing in statistical inference?

Ans=d) All of the mentioned

1. Normalized data are centred at \_\_\_ and have units equal to standard deviations of the original data

Ans=c) 1

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

1. What Is Bayes' Theorem?

Ans=Bayes' Theorem is a simple mathematical formula used for calculating conditional probabilities. It figures prominently in subjectivist or Bayesian approaches to epistemology, statistics, and inductive logic.

1. What is z-score?

Ans=A Z-score is a numerical measurement that describes a value's relationship to the mean of a group of values. Z-score is measured in terms of [standard deviations](https://www.investopedia.com/terms/s/standarddeviation.asp) from the mean. If a Z-score is 0, it indicates that the data point's score is identical to the mean score. A Z-score of 1.0 would indicate a value that is one standard deviation from the mean. Z-scores may be positive or negative, with a positive value indicating the score is above the mean and a negative score indicating it is below the mean.

1. What is t-test?

Ans=A t-test is a statistical test that is used to compare the means of two groups. It is often used in hypothesis testing to determine whether a process or treatment actually has an effect on the population of interest, or whether two groups are different from one another.

1. What is percentile?

Ans=In statistics, a percentile (or a centile) is a score below which a given percentage of scores in its frequency distribution fall (exclusive definition) or a score at or below which a given percentage fall (inclusive definition).

The most common definition of a percentile is a number where a certain percentage of scores fall below that number.

1. What is ANOVA?

Ans=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.

Analysis of variance (ANOVA) is a statistical technique that is used to check if the means of two or more groups are significantly different from each other. ANOVA checks the impact of one or more factors by comparing the means of different samples.

1. How can ANOVA help?

Ans=An ANOVA test is a way to find out if survey or experiment results are significant. In other words, they help you to figure out if you need to reject the null hypothesis or accept the alternate hypothesis. Basically, you're testing groups to see if there's a difference between them.

ANOVA, or its non-parametric counterparts, allow you to determine if differences in mean values between three or more groups are by chance or if they are indeed significantly different. ANOVA is particularly useful when analyzing the multi-item scales common in market research.