STATISTICS WORKSHEET-3

Answer-1

b) Total Variation = Residual Variation + Regression Variation

Answer-2

c) binomial

Answer-3

a) 2

Answer-4

a) Type-I error

Answer-5

Answer-6

b) Increase

Answer-7

b) Hypothesis

Answer-8

a) Minimize errors

Answer-9
a) 0

Answer-10

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.

It provides a way to calculate the probability of a hypothesis based on its prior probability, the probabilities of observing various data given the hypothesis, and the observed data itself.

Answer-11

z-score (also called a *standard score*) gives you an idea of how far from the mean a data point is. Z-scores are a way to **compare results** to a "normal" population. A z-score can be placed on a normal distribution curve. Z-scores range from -3 standard deviations (which would fall to the far left of the normal distribution curve) up to +3 standard deviations (which would fall to the far right of the normal distribution curve). In order to use a z-score, you need to know the mean μ and also the population standard deviation σ.

The **basic z score formula** for a sample is:

$$z = (x - \mu) / \sigma$$

Answer-12

A ***t* test** is a statistical testing 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.

a t test uses a **t-statistic** and compares this to t-distribution values to determine if the results are statistical significant

Answer-13

A percentile (or a centile) is a measure used in statistics indicating the value *below which* a given percentage of observations in a group of observations fall. For example, the 20th percentile is the value (or score) below which 20% of the observations may be found.

Answer-14

ANOVA compares the means of different groups and shows you if there are any statistical differences between the means. ANOVA is classified as an omnibus test statistic. This means that it can't tell you which specific groups were statistically significantly different from each other, only that at least two of the groups were.

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 types 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.udes spreading out the variance into diverse sources.