Statistics
WORKSHEET
Answers

1) b) Total Variation = Residual Variation + Regression Variation
2) c) binomial
3) a) 2
4) (a) Type-I error
5) (c) Level of confidence
6) (a) Decreases
7) (b) Hypothesis
8) (d) All of the mentioned
9) (a) 0
10) Bayes' Theorem is a way of finding a probability when we know certain other probabilities. The formula is: P(A|B) = P(A) P(B|A)P(B) Which tells us:
how often A happens given that B happens, written P(A|B), When we know:how often B happens given that A happens, written P(B|A) and how likely A is on its own,
written P(A) and how likely B is on its own, written P(B)

11) 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 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.

12) The t score is a ratio between the difference between two groups and the difference within the groups. The larger the t score, the more difference
there is between groups. The smaller the t score, the more similarity there is between groups. A t score of 3 means that the groups are three times as
different from each other as they are within each other. When you run a t test, the bigger the t-value, the more likely it is that the results are repeatable.
A large t-score tells you that the groups are different. A small t-score tells you that the groups are similar.

13) A percentile is a term used in statistics to express how a score compares to other scores in the same set. While there is technically no standard definition
of percentile, it's typically communicated as the percentage of values that fall below a particular value in a set of data scores. Percentiles are
commonly used to report values from norm-referenced tests (in which the average is determined by comparing a set of results in the same group) as the
percentages of scores that fall below those of the average of the set. For example, a male child age 12 with a weight of 130 pounds is at the 90th
percentile of weight for males of that age, which indicates that he weighs more than 90 percent of other 12-year-old boys.

14) Analysis of variance refers to a set of techniques for comparing sample means among two or more groups. If the comparison reveals a statistically significant
difference, the researcher concludes that the population means in one or more groups are different

15) ANOVA helps to figure out if we need to reject the null hypothesis or accept the alternate hypothesis.