**Statistics– WORKSHEET 6**

1. Which of the following is the correct formula for total variation?

Answer: b) Total Variation = Residual Variation + Regression Variation

2. Collection of exchangeable binary outcomes for the same covariate data are called outcomes.

Answer: c) binomial

3. How many outcomes are possible with bernoulli trial?

Answer: a) 2

4. If Ho is true and we reject it, then it is called:

Answer: (a) Type-I error

5. Level of significance is also called:

Answer: (b) Size of the test

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

Answer: (b) Increases

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

Answer: (b) Hypothesis

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

Answer: (d) All of the mentioned

9. Normalized data is centered at and has unit equal to standard deviations of the original data.

Answer: (a) 0

10. What Is Bayes' Theorem?

Answer: It describes the [probability](https://en.wikipedia.org/wiki/Probability) of an [event](https://en.wikipedia.org/wiki/Event_(probability_theory)), based on prior knowledge of conditions that might be related to the event. when applied, the probabilities involved in the theorem may have different [probability interpretations](https://en.wikipedia.org/wiki/Probability_interpretation). with [bayesian probability](https://en.wikipedia.org/wiki/Bayesian_probability" \o "Bayesian probability) interpretation, the theorem expresses how a degree of belief, expressed as a probability, should rationally change to account for the availability of related evidence.

11. What is z-score?

Answer: 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.

12. What is t-test?

Answer: t-test is a type of inferential [statistic](https://www.investopedia.com/terms/s/statistics.asp) used to determine if there is a significant difference between the means of two groups, which may be related in certain features. it is mostly used when the data sets, like the data set recorded as the outcome from flipping a coin 100 times, would follow a normal distribution and may have unknown variances. a t-test is used as a hypothesis testing tool, which allows testing of an [assumption](https://www.investopedia.com/ask/answers/073115/what-assumptions-are-made-when-conducting-ttest.asp) applicable to a population.

t-test looks at the t-statistic, the [t-distribution](https://www.investopedia.com/terms/t/tdistribution.asp) values, and the degrees of freedom to determine the statistical significance. to conduct a test with three or more means, one must use an [analysis of variance](https://www.investopedia.com/terms/a/anova.asp).

13. What is a percentile?

Answer: 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.

14. What is ANOVA?

Answer: Analysis of variance (anova) is a collection of [statistical models](https://en.wikipedia.org/wiki/Statistical_model) and their associated estimation procedures used to analyze the differences among group means in a [sample](https://en.wikipedia.org/wiki/Sample_(statistics)).. the anova is based on the [law of total variance](https://en.wikipedia.org/wiki/Law_of_total_variance), where the observed [variance](https://en.wikipedia.org/wiki/Variance) in a particular variable is partitioned into components attributable to different sources of variation.

15. How can ANOVA help?

Answer: ANOVA provides a [statistical test](https://en.wikipedia.org/wiki/Statistical_test) of whether two or more population [means](https://en.wikipedia.org/wiki/Mean) are equal, and therefore generalizes the [t-test](https://en.wikipedia.org/wiki/Student%27s_t-test#Independent_two-sample_t-test) beyond two means.