Statistics Worksheet-3

1. **b**
2. **c**
3. **a**
4. **a**
5. **b**
6. **b**
7. **b**
8. **d**
9. **a**
10. Bayes theorem, in simple words, determines the conditional probability of an event A given that event B has already occurred. Bayes theorem is also known as the Bayes Rule or Bayes Law. It is a method to determine the probability of an event based on the occurrences of prior events. It is used to calculate conditional probability. Bayes theorem calculates the probability based on the hypothesis.

11. Z score is also known as a standard score and is used to represent the number of standard deviations by which a raw score is above or below the mean. A z score is usually used as part of a z test to draw interpretations about population data. This score helps to compare data from different normal distributions.
    A z score can be positive, negative, or zero depending upon the position of the raw score with respect to the mean. To determine a z score the knowledge of the population mean and the standard deviation is required.

12. A 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. T-tests are used when the data sets follow a normal distribution and have unknown variances, like the data set recorded from flipping a coin 100 times.
    The t-test is a test used for hypothesis testing in statistics and uses the t-statistic, the t-distribution values, and the degrees of freedom to determine statistical significance.

13. In statistics, a percentile is a term that describes how a score compares to other scores from the same set. While there is no universal definition of percentile, it is commonly expressed as the percentage of values in a set of data scores that fall below a given value. a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it a score in the 95th percentile.

14. Analysis of variance, or ANOVA, is a statistical method that separates observed variance data into different components to use for additional tests. A one-way ANOVA is used for three or more groups of data, to gain information about the relationship between the dependent and independent variables. It's a statistical test that was developed by Ronald Fisher in 1918 and has been in use ever since. Put simply, ANOVA tells you if there are any statistical differences between the means of three or more independent groups.

15. ANOVA helps you find out whether the differences between groups of data are statistically significant. It works by analysing the levels of variance within the groups through samples taken from each of them.