

Statistics Worksheet-3

Q.1) B

Q.2) C

Q.3) A

Q.4) A

Q.5) B

Q.6) B

Q.7) B

Q.8) D

Q.9) A

Q.10) Bayes' Theorem:

It describes the probability of an event related to any condition. It is also known as the formula for the probability of CAUSES. For an eg, if we are calculating the probability of taking blue ball from the 2nd bag of balls, where each bag contains 3 different colour balls. So the probability of occurrence of an event is calculated depending on other conditions known as conditional probability.

Q.11) Z-score:

Z-score is also called as standard score which gives us an idea of how far from the mean a data point is i.e how many standard deviations below or above the population mean a raw score is. Z-score range from -

3 standard deviations to +3 standard deviations. One needs to know the mean and population standard deviation to calculate z-score. A z-score is the number of standard deviations from the mean value of the reference population. It tells us where the score lies on the normal distribution curve.

Q.12) T-test:

It is a statistical test that is used to compare the means of 2 groups. It tells us how significant the differences between group means are. It is used when data sets follow a normal distribution but doesn't know the population variance. It is often used in hypothesis testing to determine whether a process actually has an effect on the population of interest or whether 2 groups are different from one another. There are 3 main types of t-test :- 1. An independent samples t-test compares the means for 2 groups. 2. A paired sample t-test compares means from the same group at different times. 3. A one sample t-test tests the mean of a single group against a known mean.

Q.13) Percentile:

It is a term that describes how a score compares to other scores from the same set. It is expressed as the percentage of values in a set of data scores that fall below a given value. It shows how the given value is compare to others. E.g. score of SAT, CAT, or GRE exams.

Q.14)ANOVA:

ANOVA means analysis of variance i.e it is an analysis tool used in statistics that splits an observed aggregate variability found inside a dataset into 2 parts – systematic factors and random factors. The systematic factors have a statistical influence on the given dataset, while the random factors do not. It is used to determine the influence that independent variables have on the dependent variable in a regression study.

Q.15) How can ANOVA help?

The one-way ANOVA can help to know whether or not there are significant differences between the means of your independent variables i.e age, sex, income etc. when we understand how each independent variable's mean is different from the others, we can then begin to understand which of them has a connection to dependent variable and begin to learn what is driving that behavior.