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10. Bayes' theorem describes the probability of occurrence of an event related to any condition. It is also considered for the case of **conditional probability**. Bayes theorem is also known as the formula for the probability of "causes". For example: if we have to calculate the probability of taking a blue ball from the second bag out of three different bags of balls, where each bag contains three different colour balls viz. red, blue, black. In this case, the probability of occurrence of an event is calculated depending on other conditions is known as conditional probability. In this article, let us discuss the statement and proof for Bayes theorem, its derivation, formula, and many solved examples
11. A Z-score uses standard deviation to indicate the difference between a data set's mean and an individual observation. When the Z-score is 2.0, for example, the observed data is two standard deviations away from the mean.
12. A t-test is a statistical test 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.
13. Percentiles should not be confused with percentages. The latter is used to express fractions of a whole, while percentiles are the values below which a certain percentage of the data in a data set is found. In practical terms, there is a significant difference between the two. For example, a student taking a difficult exam might earn a score of 75 percent. This means that he correctly answered every three out of four questions. A student who scores in the 75th percentile, however, has obtained a different result. This percentile means that the student earned a higher score than 75 percent of the other students who took the exam. In other words, the percentage score reflects how well the student did on the exam itself; the percentile score reflects how well he did in comparison to other students.
14. Analysis of variance (ANOVA) is an analysis tool used in statistics that splits an observed aggregate variability found inside a data set into two parts: systematic factors and random factors. The systematic factors have a statistical influence on the given data set, while the random factors do not. Analysts use the ANOVA test to determine the influence that independent variables have on the dependent variable in a regression study.
15. ANOVA is helpful for testing three or more variables. It is similar to multiple two-sample t-tests. However, it results in fewer type I errors and is appropriate for a range of issues.