

The value that appears the most frequently in a dataset is its mode.

(b). Standard and Variance Deviation: A measure of the degree of dispersion among values in a dataset.

6. Discrete Mathematics:

Discrete mathematics is a subfield of mathematics concerned with discrete components and primarily studies structures that are countable or distinct at the basic level. In discrete mathematics, items like integers, graphs, and propositions in logic are studied, in contrast to continuous mathematics, which works with objects that may alter smoothly. It may be used in a variety of domains, including combinatorics, computer science, and cryptography.

- **Important Discrete Mathematics Topics:**

The study of sets, which are collections of unique things, is known as set theory. Subsets, unions, intersections, and Cartesian products are examples of fundamental ideas. Many other branches of mathematics are built upon the basis of set theory.

(a). Logic and Boolean Algebra: The study of logic involves reasoning. Variables in boolean algebra can have two potential values: true or false. It is essential to computers.

7. Applied Mathematics:

A subfield of mathematics known as applied mathematics deals with using mathematical ideas and procedures to address practical issues. This area of study connects pure mathematics with real-world applications by analyzing and resolving problems in a variety of fields, including science, engineering, economics, medicine, and other fields, utilizing theories and models.

- **Important Fields in Applied Mathematics:**

The technique of using mathematical formulas to depict real-world issues is known as mathematical modeling. Models might be continuous or discontinuous, linear or nonlinear, and deterministic or stochastic. They enhance comprehension and forecasting of system behaviors.

The study of numerical analysis focuses on creating and evaluating approximate solutions to mathematical puzzles that are not perfectly solvable. This covers techniques for handling differential equations, optimization issues, and equations.

Optimization is the process of selecting the optimal option from a range of options.

8. Pure Mathematics:

A subfield of mathematics known as pure mathematics is concerned with theoretical frameworks and abstract ideas without always concentrating on real-world applications. It is motivated by a desire to learn more about the fundamentals and ideas of mathematics itself as well as by an intellectual curiosity.