Table of Contents

ALGEBRA:

ALGEBRA:

- Variables & Constants

In algebra, variables are symbols used to represent unknown values or quantities in equations and expressions. Constants, on the other hand, are values that do not change and remain constant throughout a problem or equation. Together, variables and constants play a crucial role in solving mathematical problems and representing relationships in algebraic equations.

  - Understanding Variables

In algebra, variables are symbols used to represent unknown quantities or values in mathematical expressions. Variables can take different values and are often denoted by letters such as x, y, or z. By understanding variables in algebra, mathematicians can solve equations and make predictions in various real-world situations.

  - Identifying Constants

In algebra, constants are known values that do not change in an equation. Constants are represented by letters or symbols, but they do not have variables. Identifying constants in algebraic equations is essential for solving problems accurately.

- Equations & Inequalities

Equations and inequalities are foundational concepts in algebra used to solve mathematical problems. Equations involve finding the value of an unknown variable by balancing both sides of the equal sign. Inequalities, on the other hand, compare two expressions using inequality symbols such as $<$ (less than), $>$ (greater than), $\leq$ (less than or equal to), or $\geq$ (greater than or equal to).

  - Solving Linear Equations

In algebra, solving linear equations involves isolating the variable to find its value. This is done by performing the same operation to both sides of the equation to maintain equality. The goal is to simplify the equation until you find the value of the variable that satisfies the equation.

  - Graphing Inequalities

Graphing inequalities in algebra involves representing the solutions to an inequality on a number line or coordinate plane. The shaded area on the graph indicates all possible values that satisfy the inequality. Different types of inequalities, such as linear and quadratic, are graphed using various techniques in algebra.