MATHS SYLLABUS

Class – 9

9th Class Maths Syllabus – An Overview

CBSE syllabus for Class 9 Maths helps students to start studying from the NCERT textbooks. So, to help students in their studies, we have here provided the CBSE syllabus for Class 9 Maths for the academic year 2023-2024. The CBSE Syllabus will help students in planning their studies in advance. So, in case they have any doubts while studying, they can ask their teacher the next day. Also, to help students, we have provided the NCERT solutions for Class 9 Maths. This will help them in scoring marks in the exam.

Chapter – 1 (Real Numbers)

- Integers
- Rational numbers on the number line.
- Rational numbers in the form of recurring or terminating decimals
- Examples of non-recurring or non-terminating decimals
- The existence of non-rational (irrational) numbers such as $\sqrt{2}, \sqrt{3}$ and their representation on the number line
- The existence of non-rational (irrational) numbers such as 2 and 3 and their representation on the number line represents a unique real number.
- Existence of $\sqrt{x}$ for a given positive real number x
- Definition of nth root of a real number
- Recall of laws of exponents with integral powers
- Rational exponents with positive real bases (to be done by particular cases, allowing the learner to arrive at the general laws)

- Real numbers of the types 1/ (?+?√?) and 1/ √?+√√y) (and their combinations), where x and y are natural numbers and a and b are integers, rationalised (with precise meaning).

Chapter – 2 (Polynomials)

(i) Algebraic Identities.

(ii) Factorisation of Polynomials.

(iii) Polynomials in One Variable.

(iv) Remainder Theorem.

(v) Zeroes of a Polynomial.

Chapter – 3 (Linear Equations in Two Variables)

- Recall of linear equations in one variable.
- Introduction to the linear equation in two variables.
- Study of linear equations of the form ax + by + c = 0.
- Linear equation in two variables with infinitely many solutions and justify using graphs.
- Graph of linear equations in two variables - real-life problems with both algebraic and graphical solutions.

Chapter – 4 (Quadratic Equations)

Quadratic equation : A quadratic equation in the variable x is of the form $ax^2 + bx + c = 0$, where a, b, c are real numbers and $a \neq 0$.

• Roots of a quadratic equation : A real number α is said to be a root of the quadratic equation $ax^2 + bx + c = 0$, if $a\alpha^2 + b\alpha + c = 0$.

• The roots of the quadratic equation $ax^2 + bx + c = 0$ are the same as the zeroes of the quadratic polynomial $ax^2 + bx + c$.

• Finding the roots of a quadratic equation by the method of factorisation : If we can factorise the quadratic polynomial $ax^2 + bx + c$, then the roots of the quadratic equation $ax^2 + bx + c = 0$ can be found by equating to zero the linear factors of $ax^2 + bx + c$.

• Finding the roots of a quadratic equation by the method of completing the square : By adding and subtracting a suitable constant, we club the x^2 and x terms in the quadratic equation so that they become a complete square, and solve for x.

• Quadratic Formula : If $b^2 - 4ac \geq 0$, then the real roots of the quadratic equation $ax^2 + bx + c = 0$ are given by $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$.

• The expression $b^2 - 4ac$ is called the discriminant of the quadratic equation.

• Existence of roots of a quadratic equation: A quadratic equation $ax^2 + bx + c = 0$ has

(i) two distinct real roots if $b^2 - 4ac > 0$

(ii) two equal real roots if $b^2 - 4ac = 0$

(iii) no real roots if $b^2 - 4ac < 0$.

Chapter – 5 (Lines and Angle)

- Introduction.
- Basic Terms And Definition.
- Intersecting Lines And Non-Intersecting Lines.
- Pairs of Angles.
- Parallel Lines And Transversal Line.

- Lines Parallel To The Same Line.
- Angle Sum Property of A Triangle.

Chapter – 6 (Triangles)

- Area of Triangles.
- Congruency rules: SAS Congruence, ASA Congruence, SSS Congruence, RHS Congruence.
- Triangle in equalities.
- Relation between the angle of a triangle and the facing side.

Chapter - 7 (Quadrilaterals)

(i) Properties of a Parallelogram.

(ii) The Mid-point Theorem.

(iii) Areas of Parallelograms .

Chapter – 8 (Introduction To Euclid's Geometry)

(i) Euclid's Definitions and Axioms.

(ii) Euclid's Postulates.

Chapter – 9 (Statistics)

(i) Collection of data,

(ii) Presentation of data

(tabular form, ungrouped/grouped, bar graphs, histograms)

Chapter – 10 (Mensuration)

- **Heron's formula** - Area of a triangle by Heron's formula (no proof)
- Surface areas and volumes of cubes, cuboids, spheres (including hemispheres) and right circular cylinders / right circular cones.