Bihar Board Class 12 Mathematics Syllabus 2025-26

Bihar School Examination Board (BSEB)

Chapter-wise Syllabus and Weightage

Academic Year 2025-26 (Aligned with NCF 2005)

Prepared for Students and Educators

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Contents

1 Mathematics Syllabus Overview

The Bihar Board Class 12 Mathematics Syllabus for 2025-26, designed in accordance with the National Curriculum Framework 2005, covers six units: Relations and Functions, Algebra, Calculus, Vectors and Three-Dimensional Geometry, Linear Programming, and Probability. The total marks are 100 (theory only, no practical component), with Calculus carrying the highest weightage. This document provides a detailed breakdown of chapters, key topics, and mark distribution to aid students in preparing for the board exams scheduled for February 2026. For the official syllabus PDF, visit `https://biharboardonline.bihar.gov.in`.

2 Exam Pattern

The BSEB Class 12 Mathematics exam follows this structure:

- **Total Marks**: 100 (Theory).
- **Question Types**: 50% objective (Multiple Choice Questions, MCQs) and 50% subjective (short/long-answer questions).
- **MCQs**: 60 questions (1 mark each), attempt any 50.
- **Subjective Questions**: Short-answer (2 marks, attempt 15/18), Long-answer (5 marks, attempt 5/8).
- **Passing Marks**: 33% (33 marks).
- **Duration**: 3 hours and 15 minutes.

3 Unit-wise Syllabus and Weightage

S.No.	Unit	Chapter	Key Topics	Marks
I	Relations and Functions	Relations and Functions	Types of relations (reflexive, symmetric, transitive, equivalence), One-to-one and onto functions	2*10
		Inverse Trigonometric Functions	Definition, range, domain, principal value branch, graphs	

II	Algebra	Matrices	Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose, symmetric and skew-symmetric matrices, operations (addition, multiplication, scalar multiplication), non-commutativity, invertible matrices, uniqueness of inverse	2*13
		Determinants	Determinants of square matrices (up to 3x3), minors, co-factors, area of a triangle, adjoint, inverse, solving systems of linear equations (2 or 3 variables)	
III	Calculus	Continuity and Differentiability	Continuity, differentiability, chain rule, derivatives of inverse trigonometric functions (sinźx, cosźx, tanźx), implicit functions, exponential and logarithmic functions, logarithmic differentiation, parametric forms, second-order derivatives	4*40

		Applications of Derivatives	Rate of change, increasing/decreasing functions, maxima and minima (first and second derivative tests), simple real-life problems	
		Integrals	Integration as inverse of differentiation, substitution, partial fractions, by parts, simple integrals, Fundamental Theorem of Calculus, properties of definite integrals	
		Applications of Integrals	Area under curves (lines, circles, parabolas, ellipses in standard form)	
		Differential Equations	Definition, order, degree, general and particular solutions, separation of variables, homogeneous and linear differential equations	

IV	Vectors and Three-Dimensional Geometry	Vectors	Vectors and scalars, magnitude, direction, direction cosines/ratios, types of vectors (equal, unit, zero, parallel, collinear), position vector, vector addition, scalar multiplication, dot and cross products	2*18
		Three-Dimensional Geometry	Direction cosines/ratios, Cartesian and vector equations of a line, skew lines, shortest distance, angle between lines	
V	Linear Programming	Linear Programming	Introduction, constraints, objective function, optimization, graphical method, feasible/infeasible regions, optimal solutions (up to three non-trivial constraints)	09
VI	Probability	Probability	Conditional probability, multiplication theorem, independent events, total probability, Bayes theorem, random variables, probability distribution, mean	10
			Total (Theory)	**100**

4 How to Download the Official Syllabus

To access the official BSEB Class 12 Mathematics syllabus PDF:

1. Visit `https://biharboardonline.bihar.gov.in`.
2. Navigate to the 'Syllabus' section.
3. Select 'Class 12' and choose 'Mathematics'.
4. Download the PDF by clicking the provided link.

5 Preparation Tips

- Prioritize **Calculus** (40 marks) by mastering differentiation, integration, and their applications (maxima/minima, area under curves).
- Practice **Vectors and Three-Dimensional Geometry** (18 marks) for 3D concepts and vector operations.
- Focus on **Algebra** (13 marks), particularly matrix operations and determinants for solving linear equations.
- Regularly practice MCQs to excel in the objective section (50 marks).
- Use NCERT textbooks and BSEB model papers for comprehensive preparation.
- Solve previous years question papers (available on the BSEB website).
- Create a study schedule to cover all units by January 2026.