



**Maharashtra State Board of
Secondary & Higher Secondary School, Pune**

Department of Mathematics

Subject: Mathematics (40)

Standard: Eleven

Faculty: Science

Syllabus

XI Mathematics (Theory & Practical Part1)

Theory Index

Sr. No.	Unit/Topic	Weightage
1	Angle and its Measurement	4
2	Trigonometry - I	6
3	Trigonometry - II	8
4	Determinants and Matrices	10
5	Straight Line	5
6	Circle	4
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Practical Index

Sr. No.	Practical's Name
1	Angle and its Measurement
2	Trigonometry - I
3	Trigonometry - II
4	Determinants and Matrices
5	Straight Line
6	Circle and Parabola
7	Ellipse And Hyperbola
8	Measures of Dispersion
9	Probability

Syllabus

Sr. No.	Name of the Topic	Scope of Syllabus
1	Angle and its measurement	<ul style="list-style-type: none">● Directed angle.● Angles of different measurements● Units of measure of an angle● Length of an arc of a circle.● Area of a sector of a circle.
2	Trigonometry - 1	<ul style="list-style-type: none">● Trigonometric functions with the help of unit circle● Extensions of trigonometric functions to any angle● Range and Signs of trigonometric functions in different quadrants● Fundamental Identities and Periodicity of trigonometric functions● Domain, Range and Graph of each trigonometric function● Polar Co-ordinates
3	Trigonometry - II	<ul style="list-style-type: none">● Trigonometric functions of sum and difference of angles.● Trigonometric functions of allied angles.● Trigonometric functions of multiple angles.● Factorization formulae.● Trigonometric functions of angles of a Triangle
4	Determinants And Matrices	<ul style="list-style-type: none">● Definition and Expansion of Determinants● · Minors and Co-factors of determinants● · Properties of Determinants● · Applications of Determinants● · Introduction and types of Matrices● · Operations on Matrices● · Properties of related matrices

5	Straight Line	<ul style="list-style-type: none"> ● Locus of a points in a co-ordinate plane ● Equations of line in different forms ● Angle between two lines, perpendicular and parallel lines ● Distance of a point from a line ● Family of lines
6	Circle	<ul style="list-style-type: none"> ● Equation of a circle and its different forms ● Equation of Tangent to a circle ● Condition for tangency ● Director circle
7	Conic sections	<ul style="list-style-type: none"> ● Conic sections : parabola, ellipse, hyperbola ● Standard equation of conics ● Equation of tangent to the conics ● Condition for tangency
8	Measures of Dispersion	<ul style="list-style-type: none"> ● Meaning and Definition of Dispersion ● Range of data. ● Variance and Standard Deviation ● Coefficient of Variation
9	Probability	<ul style="list-style-type: none"> ● Basic Terminologies ● Concept of probability ● Addition Theorem ● Conditional probability ● Multiplication Theorem ● Baye's Theorem ● Odds