

MATHEMATICS
For Class IX (marks 75)

1. MATRICES AND DETERMINANTS

- 1.1 Introduction to Matrices Define
- 1.2 Types of Matrices
- 1.3 Addition and Subtraction of Matrices
- 1.4 Multiplication of Matrices
- 1.5 Multiplicative Inverse of a Matrix
- 1.6 Solution of Simultaneous Linear Equations

2. REAL AND COMPLEX NUMBERS

- 2.1 Real Numbers
- 2.2 Properties of Real Numbers
- 2.3 Radicals and Radicands
- 2.4 Laws of Exponents/Indices
- 2.5 Complex Numbers
- 2.6 Basic Operations on Complex Numbers

3. LOGARITHMS

- 3.1 Scientific Notation
- 3.2 Logarithm
- 3.3 Common and Natural Logarithm
- 3.4 Laws of Logarithm
- 3.5 Application of Logarithm

4. ALGEBRAIC EXPRESSIONS AND ALGEBRAIC FORMULAS

- 4.1 Algebraic expressions
- 4.2 Algebraic Formulae
- 4.3 Surds and their Application
- 4.4 Rationalization

5. FACTORIZATION

- 5.1 Factorization
- 5.2 Remainder Theorem and Factor Theorem
- 5.3 Factorization of a Cubic Polynomial

6. ALGEBRAIC MANIPULATION

- 6.1 Highest Common Factor and Least Common Multiple
- 6.2 Basic Operations on Algebraic Fractions

6.3 Square Root of Algebraic Expression

7. LINEAR EQUATIONS AND INEQUALITIES

7.1 Linear Equations

7.2 Equation involving Absolute Value

7.3 Linear Inequalities

7.4 Solving Linear Inequalities

8. LINEAR GRAPHS AND THEIR APPLICATION

8.1 Cartesian Plane and Linear Graphs

8.2 Conversion Graphs

8.3 Graphic Solution of Equations in two Variables

9. INTRODUCTION TO COORDINATE GEOMETRY

9.1 Distance Formula

9.2 Collinear Points

9.3 Mid-point Formula

10. CONGRUENT TRIANGLES

10.1 Congruent Triangles

11. PARALLELOGRAMS AND TRIANGLES

11.1 Parallelograms and Triangles

12. LINE BISECTORS AND ANGLE BISECTORS

12.1 Line Bisectors and Angle Bisectors

13. SIDES AND ANGLES OF A TRIANGLE

13.1 Sides and Angles of a Triangle

14. RATIO AND PROPORTION

14.1 Ratio and Proportion

15. PYTHAGORAS' THEOREM

15.1 Pythagoras' Theorem

16. THEOREMS RELATED WITH AREA

16.1 Theorems Related with Area

17. PRACTICAL GEOMETRY – TRIANGLES

- 17.1 Construction of Triangle
- 17.2 Figures with Equal Areas

RECOMMENDED REFERENCE BOOKS FOR CLASS IX

The question paper will be syllabus oriented. However, the following book is recommended for reference and supplementary reading:

1. Mathematics (Science Group)
Caravan Book House, Lahore