GCSE Topics
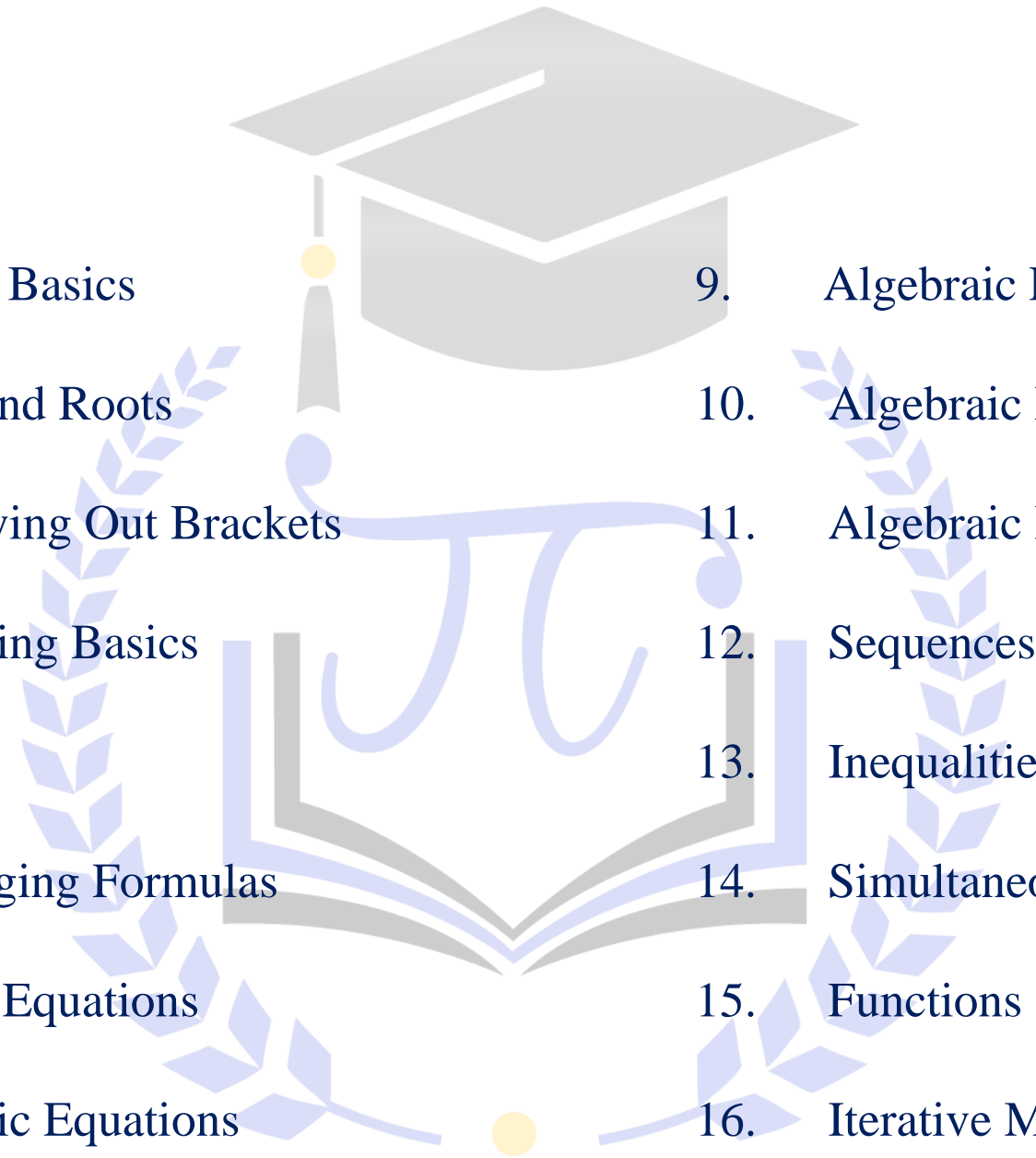
1. Number

   1. Type of numbers

     1.2. Factors and Multiples

     1.3. LCM and HCF

     1.4. Rounding and Estimating

   2. Fractions

   3. Decimals

   4. Standard Form or Scientific Notation

   5. Bounds

   6. Unit Conversions

     6.2. Speed, Density and Pressure

   7. Percentages

     7.2. Compound Growth & Decay

   8. Proportions

   9. Ratios

2. <u>Algebra</u>

1. Algebra Basics
2. Power and Roots
3. Multiplying Out Brackets
4. Factorising Basics
5. Surds
6. Rearranging Formulas
7. Solving Equations
8. Quadratic Equations

9. Algebraic Fractions
10. Algebraic Proofs
11. Algebraic Identity
12. Sequences
13. Inequalities
14. Simultaneous Equations
15. Functions
16. Iterative Methods

3. Graphs

1. Straight Line and Gradients

   1.1. Drawing Straight line graphs

   1.2. Equation of a Straight Line Simple

   1.3. Gradient of a Straight Line

      1.3.1. Parallel and Perpendicular Lines

   1.4. Find Equation of a Line Advanced

   1.5. Proving a Coordinate Lies on a graph

   1.6. Coordinates and Ratios

   1.7. Equation of tangent to circle

2. Quadratic Graphs

3. Solving Equations with Graphs

   3.1. Simultaneous equations

   3.2. Solving Simultaneous Equations Linear and Non-Linear with Graphs

   3.3. Solving Harder Equation with Graphs

   3. 4. Solving Inequalities with Graphs

4. Distance – Time Graphs

5. Graph Transformation

6. 10 Common Graphs Shapes

4. Measures and Geometry

Measures

1.1. Locus of Points and Construction#

   1.1.1. Locus from a Single Fixed Point

   1.1.2. Locus from One Line

   1.1.3. Locus from Two Lines

   1.1.4. Locus from Two Given Points

1.2. Bearings

1.3. Congruent Triangles

   1.3.1. SSS – Side Side Side

   1.3.2. SAS - Side Angle Side

   1.3.3. ASA – Angle Side Angle

   1.3.4. RHS – Right Angle Hypotenuse Side

1.4. Similar Shapes

   1.4.1. Levels of Scale Factor

Geometry

2.1. Introduction

2.2. Types of Angles

2.3. Some Important Rules

   2.3.1. Important Triangles

   2.3.2. Important Quadrilaterals

2.4. Parallel Lines

   2.4.1. Alternate, Allied and Corresponding Angles

2.5. Polygons

   2.5.1. Examples of Polygons

   2.5.2. Interior and Exterior Angles

2.6. Circle Geometry

   2.6.1. Circle Theorems

2.7. Transformations

5. Pythagoras and Trigonometry

Pythagoras Theorem

Trigonometry

Vectors

6. Probability

Probability Basics

    1.1. Terminology

    1.2. Finding Probabilities

    1.3. Sample Space

    1.4. Product Rule to Count Outcomes

    1.5. Probability of Events Not Happening

Relative Frequency

    2.2. Frequency Trees

    2.3. Expected Frequency

    2.4. Independent Events

      2.4.1. Probability Trees

    2.5. Dependent Events

      2.5.1. Probability Trees

    3.0. Venn Diagrams

7. Statistics

Statistics Basics

    1.1. Terminology, Sample and Data Collection

    1.2. Mean, Median, Most and Range

    1.3. Discrete: Frequency Tables

    1.4. Continuous: Frequency Tables

    1.5. Cumulative Frequency

Histograms and Frequency Density

    2.1. Histogram

    2.2. Scatter Graph

    2.3. Frequency Polygon

    2.4. Stem and Leaf

    2.5. Pie Chart

    2.6. Time Series

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