



Algebra 1

Section 1 – Working with Numbers

Section 2 - Exponents and Radicals

Section 3 - Algebraic Expressions

Section 4 – Quadratic Expressions

Section 5 – Algebraic Fractions

Section 6 - Equations & Inequations

Section 7 - Systems of Equations

Section 8 - Sequences

Section 9 – Graphs

Section 10 - Functions

Section 11 – Quadratic Functions

Section 1 – Working with Numbers

Number Types

Sets

Venn Diagrams

Working with Infinity

Dividing by Zero

Square-Rooting a Negative Number

Section 2 - Exponents and Radicals

Working with Exponents

Exponent Rules

Negative Powers and Powers of Zero

Fractional Powers

Surds

Adding and Subtracting Radicals

Multiplying and Dividing Radicals

Rationalizing Fractions



Section 3 - Algebraic Expressions

Variables
Algebraic Formulae
Using Algebraic Formulae
Changing the Subject of a Formula
Algebraic Expressions
Simplifying Algebraic Expressions
Working with Parentheses
Factorizing Using a Common Factor

Section 4 – Quadratic Expressions

Quadratic Expressions & Functions
Factorizing a Quadratic Expression Using a Common Factor
Factorizing a Quadratic Expression as a Difference of Two Squares
Factorizing a Quadratic Expression as a Trinomial
Completing the Square

Section 5 – Algebraic Fractions

Simplifying Algebraic Fractions
Multiplying and Dividing Algebraic Fractions
Adding and Subtracting Algebraic Fractions

Section 6 - Equations & Inequations

Solving Linear Equations
Solving Equations with Parentheses
Solving Inequations
Solving Inequations – Multiplying or Dividing by a Negative

Section 7 - Systems of Equations

Starting Systems of Equations
Solving by Elimination of a Variable
Solving More Complex Systems of Equations

Section 8 - Sequences

Sequences Rules
Convergent and Divergent Sequences
The Limit of a Sequence
Arithmetic Sequences
Geometric Sequences (Progressions)



Section 9 - Graphs

Cartesian Co-ordinate System
Straight Lines in the X-Y Plane
The Gradient (Slope) of a Straight-Line Graph
The Equation of a Straight-Line Graph
Finding the X and Y intercepts of a Straight-Line Graph
Horizontal and Vertical Lines
Sketching Straight-Line Graphs
Writing the Equation of a Straight-Line from its Graph

Section 10 - Functions

Starting Mathematical Functions
Types of Function
Graphs of Functions
Maximum and Minimum Values
Domain and Range of a Function
Average Rate of Change of a Function

Section 11 – Quadratic Functions

The Graph of Quadratic Functions
Solving Quadratic Equations by Factorizing Trinomials
Solving Quadratic Equations Using Completed Square Form
Solving Quadratic Equations using the Quadratic Formula
The Discriminant for Quadratic Equations
Graphical Interpretation of Quadratic Equations
The Roots of Graphs of Quadratic Functions
The Turning Point of Graphs of Quadratic Functions
The Y-Intercept of Graphs of Quadratic Functions
The Axis of Symmetry of the Graph of a Quadratic Function