# 2020 - 2021 Idea Math Online Program (School Enrichment) <br> ALGEBRA 2 CONTENTS Session I (Chapter 1—Chapter 5) 

## Chapter 1 Functions

* 1.1 Basic Terms of Functions
* 1.2 Review Linear Functions
* 1.3 Solving Absolute Value Equations and Inequalities
* 1.4 Review Absolute Value Functions
* 1.5 Piecewise Functions
* 1.6 Function Operations and Composition of Functions


## Chapter 2 Quadratic Functions

* 2.1 Graphing Quadratic Functions in Vertex Forms
* 2.2 Graphing Quadratic Functions in Intercept (Factored) Form
* 2.3 Converting Between Different Forms of Quadratic Functions
* 2.4 Writing the Equation of a Parabola Using Given Attributes
* 2.5 Using Quadratic Functions in Real Life


## Chapter 3 Quadratic Equations and Inequalities

* 3.1 Solving Quadratic Equations by Factoring and Completing the Square
* 3.2 Relating Roots and Coefficients (Viete's Relations)
* 3.3 Operations with Complex Numbers
* 3.4 Quadratic Formula and Discriminant
* 3.5 Graphing and Solving Quadratic Inequalities
* 3.6 Using Quadratic Equations to Solve Problems


## Chapter 4 Systems of Linear (Quadratic) Equations and Inequalities

* 4.1 Solving Linear Systems of Equations by Graphing
* 4.2 Solving Linear (Quadratic) Systems of Equations Algebraically
* 4.3 Solving Systems of Linear Equations in Three Variables
* 4.4 Solving Systems of Linear Inequalities
* 4.5 Convex Regions


## Chapter 5 Polynomial Functions and Equations

* 5.1 Adding, Subtracting, and Multiplying Polynomials
* 5.2 Factoring and Solving Polynomial Equations
* 5.3 Dividing Polynomials (The Remainder and Factor Theorems)
* 5.4 Rational Zero Theorem and Fundamental Theorem of Algebra
* 5.5 Graphing Polynomial Functions


# 2020 - 2021 Idea Math Online Program (School Enrichment) 

## ALGEBRA 2 CONTENTS

## Session II (Chapter6 - Chapter 9)

## Chapter 6 Rational Functions and Equations

* 6.1 Inverse and Joint Variation
* 6.2 Graphing Simple Rational Functions
* 6.3 Multiplying and Dividing Rational Expressions
* 6.4 Adding and Subtracting Rational Expressions
* 6.5 Solving Rational Equations


## Chapter 7 Radical Functions

* 7.1 Inverse Functions (Inverse of Cubic Functions)
* 7.2 Proving Inverse Using Composition of functions
* 7.3 Graphing Square Root and Cube Root Functions
* *7.4 Fitting Square Root Functions to Data
* 7.5 Radical Expressions and Rational Exponents
* 7.6 Solving Radical Equations


## Chapter 8 Exponential and Logarithmic Functions and Equations

* 8.1 Geometric Sequence
* 8.2 Exponential Growth and Decay Functions
* 8.3 The Number e
* *8.4 Fitting Exponential Functions to Data
* 8.5 Logarithmic Functions
* 8.6 Graphing Logarithmic Functions
* 8.7 Properties of Logarithms
* 8.8 Solving Exponential and Logarithmic Equations


## Chapter 9 Conic Sections

* 9.1 The Distance and Midpoint Formulas, Circles
* 9.2 Conic Form of Parabolas
* 9.3 Ellipses
* 9.4 Hyperbolas
* 9.5 Solving Quadratic Systems

