Honors Algebra II (High School Level) Syllabus

Instructor: Edward Zhu
Weekly Classes on Saturday from 3:30 PM EST 4:30 PM EST

Course Description

This course is aimed at middle school students looking to get ahead in math. The main objective is to prepare students for their high school math journeys by building a solid foundation. After a review of Algebra I topics, the course will focus on Quadratics, Graphing, and Systems of Equations. Later, the course will introduce Matrices and Circles. Finally, the course will dive into topics such as Logarithms, Radicals, Functions, and Word Problems that utilize specific Algebraic Equations. The course will give students taking Algebra II in the fall an extra edge and give everyone tools to succeed throughout high school.

Meeting Agenda

7/8 Meeting 1: Review of Algebra I Foundations
1. Linear Equations
2. Solving Inequalities
3. Systems of Equations
4. Exponent Laws, Distance & Midpoint Formula

7/15 Meeting 2: Transformations & Factoring Quadratics
1. Explanation of Concept
2. Complex Numbers
3. Key Terms + Formulas
4. Examples

7/22 Meeting 3: Polynomials Part 1
1. Classifying Polynomials
2. Operations + Formulas
3. Long Division + Synthetic Division
4. Remainder Theorem
5. Factoring

7/29 Meeting 4: Polynomials Part 2
1. Finding Zeros
2. Conjugates
3. Writing Polynomials
4. Factoring Polynomials
5. Factorials

6. Binomial Expansion + Theorem

8/5 Meeting 5: Rational and Radical Functions
1. Operations
2. Simplifying
3. Rational Exponents

8/12 Meeting 6: Logarithms & Properties
1. Operations
2. Definition of Logarithms
3. Properties
4. Graphing
5. Word Problems

8/19 Meeting 7: Functions
1. Operations
2. Inverse Functions
3. Proving Inverses
4. Graphing

8/26 Meeting 8: Exponential Functions & Word Problems
1. Formulas
2. Applications
3. Compound Interest, Exponential Growth/Decay
4. Word Problem Examples

9/2 Meeting 9: Circles & Matrices
1. How to Solve + Definition
2. Examples
3. Circles Definition
4. Examples
5. Graphing