

Algebra 2/Trigonometry Course Outline

- **Unit 1: Algebra Part 1**
 - Quiz 1 (6 days)
 - Review Factoring; More Complicated Factoring
 - Factoring the Difference and Sum of Perfect Cubes; Factor By Grouping
 - Rational Numbers; Reducing Rationals, Expressions, and Restrictions
 - Multiplication and Division of Rational Expressions
 - Review
 - Quiz
 - Quiz 2 (4 days)
 - Adding and Subtracting Rational Expressions
 - Complex Fractions
 - Review
 - Quiz
 - Quiz 3 (6 days)
 - Rational Equations
 - Rational Word Problems
 - Radical Equations
 - Conjugate and Irrational Numbers; Simplifying Radicals
 - Review
 - Quiz
 - Quiz 4 (8 days)
 - Cube Roots and Quadratic Equations
 - Quadratic Formula; Discriminant
 - Sum/Product of Roots; Quadratic Inequalities
 - Imaginary Numbers
 - Solving Quadratics with Imaginary Roots
 - Graphing Complex Numbers
 - Review
 - Quiz
 - Unit Exam
 - 5 Review Sheets
 - 2-Day Exam
- **Unit 2: Algebra Part 2**
 - Quiz 5 (6-7 days)
 - Transformations
 - Compositions of Functions
 - Line Reflections
 - Introduction to Domain and Range; Onto and One-to-One
 - Review
 - Quiz
 - Quiz 6 (6 days)
 - Inverse Functions: Linear
 - Quadratic Functions; Solving Quadratic Inequalities
 - Absolute Value; Absolute Value Inequalities
 - Review
 - Step Functions
 - Quiz

- Quiz 7 (5 days)
 - Quadratic Inequalities Shortcut
 - Polynomial Functions; Finding Zeroes; Long Division; Synthetic Division
 - Finding Zeroes and Review
 - More Step Functions and Review
 - Quiz
- Linear and Quadratic Regressions
- Unit Exam
 - 7 Review Sheets
 - 1-Day Exam
- **Unit 3: Exponents and Logarithms**
 - Quiz 8 (5 days)
 - Properties of Exponents
 - Exponential Functions; Bases Other than 10
 - Exponential Equations
 - Review
 - Quiz
 - Quiz 9 (7 days)
 - Logarithmic Functions
 - Properties and Rules of Logarithms
 - Logarithm Practice and Review
 - Inverse Logarithms
 - Simple Logarithmic Equations
 - Review
 - Quiz
 - Quiz 10 (7 days)
 - Applications of Exponentials and Logarithms
 - Exponential Growth and Decay
 - Solving More Logarithmic Equations
 - Natural Logarithms and Equations
 - Continuous Growth and Applications
 - Review
 - Quiz
 - Unit Exam
 - 3 Review Sheets
 - 2-Day Exam
- **Unit 4: Trigonometry Part 1**
 - Quiz 11 (6 days)
 - Basic Trigonometric Functions (Sine, Cosine, Tangent)
 - Reciprocal Trigonometric Functions; Special Right Triangles
 - Radians; Converting Between Radians and Degrees; Co-Functions
 - Rotating Angles; Finding Exact Values of Trigonometric Expressions
 - Review
 - Quiz
 - Quiz 12 (6 days)
 - Unit Circle; Parent Functions for Sine and Cosine
 - Rewriting Trigonometric Expressions; Rotation/Co-Function
 - Solving for Angle Measure of Trigonometric Equations
 - Linear Trigonometric Equations

- Review
 - Quiz
- Quiz 13 (7 days)
 - Quadratic Trigonometric Equations Day 1; Trigonometric Identities
 - Quadratic Trigonometric Equations Day 2; Involving More than One Function
 - Simplifying Trigonometric Expressions
 - Proving Trigonometric Identities Day 1
 - Proving Trigonometric Identities Day 2
 - Review
 - Quiz
- Unit Exam
 - 3 Review Sheets
 - 1-Day Exam
- **Midterm Information**
 - Approximately 1 Week of Review
- **Unit 5: Trigonometry Part 2**
 - Quiz 13 (4 days)
 - Sum and Difference Formulas
 - Double Angle Formulas
 - Applications of Formulas, Trigonometric Proofs, and Review
 - Quiz
 - Quiz 14 (7 days)
 - Half-Angle Formulas
 - Area of Triangles
 - Law of Sine
 - The Ambiguous Case of Law of Sine
 - Law of Cosine
 - Review
 - Quiz
 - Quiz 15 (5 days)
 - Solving Double Angle Trigonometric Equations
 - Double Angle Proofs
 - Vectors and Forces
 - Angle of Elevation and Review
 - Quiz
 - Quiz 16 (6 days)
 - Graphs of Sine and Cosine
 - Amplitude, Frequency, and Period
 - Graphing Two Trigonometric Functions (2 days)
 - Graphs of Tangent and Cotangent
 - Graphs and Secant and Cosecant
 - Quiz
 - Quiz 17 (4 days)
 - Inverse Trigonometric Functions
 - Evaluating Inverse Trigonometric Expressions (2 days)
 - Quiz
 - Unit Exam
 - 3 Review Sheets
 - 1-Day Exam

- **Unit 6: Conic Sections and Variation**
 - Quiz 18 (6 days)
 - Equations of Circles; Completing the Square
 - Focus and Directrix of Parabolas
 - Graphs of Ellipses
 - Graphs of Hyperbolas
 - Review
 - Quiz
 - Quiz 19 (3 days)
 - Direct and Inverse Variation
 - Variation Applications
 - Quiz
 - 30-week test
 - 4 Review Sheets
 - 2-Day Exam
- **Unit 7: Probability and Statistics**
 - Quiz 20 (6 days)
 - Basic Probability and Combinations (2 days)
 - Binomial Probabilities (Bernoulli)
 - Venn Diagrams
 - Review
 - Quiz
 - Quiz 21 (7 days)
 - Summation
 - Measures of Central Tendency (Mean, Median, Mode)
 - Measures of Dispersion (Variance, Standard Deviation) (2 days)
 - Normal Distribution
 - Binomial Expansion and Review
 - Quiz
- **Unit 8: Inequalities and Series and Sequences**
 - Quiz 22 (5 days)
 - Review Inequalities
 - Rational Functions
 - Rational Inequalities
 - Review
 - Quiz
 - Quiz 23 (Approximately 5 days)
 - Sequences: Arithmetic, Geometric, and Recursive
 - Finding the n th Term
 - Series
 - Review
 - Quiz
- **Regents Review**