

Algebra 2 Level A Pacing Guide

Marking Period 1

Unit 1: Linear Functions

Identifying Linear and Nonlinear functions
Average Rate of Change (tables, graphs, equations)
Slope Formula
Graphing in slope-intercept form
Writing Equations in slope-intercept form (graph, points, table)
Standard Form and Graphing using Intercepts
Deciding if a point lies on a line
Application Problems (slope, average rate of change, linear equations)

Unit 2: Systems of Equations and Inequalities

Solve systems of equations by graphing
Solve systems of equations by elimination
Solve systems of equations by substitution
System applications
Graphing systems of linear inequalities
Linear inequalities Application problems

Unit 3: Quadratic Functions

Vertex Form of a Quadratic Functions
Standard Form of a Quadratic Function
Solving Quadratics by graphing and the zero product property

Marking Period 2

Complex Numbers and Operations
Solving Quadratics using Square Roots
Completing the Square
Quadratic Formula

Unit 4: Exponential Functions (Brief)

Writing Exponential Functions from tables
Exponential Growth and Decay (Growth/Decay Factor, Rate, equations)
Linear vs. Exponential Functions

Unit 5: Pythagorean Theorem and Trigonometry

Pythagorean Theorem and Applications
Trigonometric Functions (sin/cos/tan AND reciprocals): Finding sides and angles
Trigonometric Ratios of Similar triangles
Trigonometric Application Problems (missing sides and angles, including angles of elevation and depression)

Unit 6: Circles and Volume

Circle formulas, central angles, intersecting arcs, arc length
Tangent Lines
Inscribed Angles
Calculate Volume of Cones, Cylinders, Spheres, prisms, and pyramids
Volume Application Problems

Unit 7: Transformations

Reflection, translation, rotation,
Dilation around origin and not around origin
Center of dilation, scale factor

Marking Period 3**Unit 8: Polynomials**

Graphing polynomial functions
End Behavior (Introduce limit notation)
Adding, Subtracting, and Multiplying Polynomials
Division of Polynomials (synthetic and long)
Factoring Polynomials
Remainder Theorem and Factor Theorem
Zeros of Polynomial Functions
Fundamental Theorem of Algebra
Conjugate Root Theorem

Unit 9: Exponential and Logarithmic Functions

Inverse Functions and Relations
Exponential Models
Logarithms
Logarithmic Functions
Properties of Logarithmic Functions
Exponential and Logarithmic Equations

Marking Period 4**Unit 10: Trigonometric Functions**

Angles of Rotation
Review Special Right Triangles (sin/cos/tan of 30-60-90 and 45-45-90 triangles)
Unit Circle (be sure to connect special right triangles to unit circle)
Graphs of sine/cosine/tangent

Unit 11: Rational Functions

Multiplying and Dividing rational functions
Adding and Subtracting rational functions
Graphing Rational Functions and Identifying Asymptotes

Unit 12 (Time-permitting): Rational Exponents and Radical Functions

Nth root, radicals, and rational exponents

Properties of exponents and radicals

Solving radical equations

** Any Level A student looking to take AP-PreCalculus must know units 8, 9, 10, and 11.