Before NJGPA: September to December MP 1

Topic 2: Quadratic Functions and Systems.

- 2-1: Vertex form of a Quadratic Function
- 2-2: Standard form of a Quadratic Function
- 2-3: Factored from of a Quadratic Function
- 2-4: Complex Numbers and Operations
- 2-5: Completing the Square (Level A only)
- 2-6: The Quadratic Formula

MP 2

Topic 3: Polynomial Functions

- 3-1: Graphing Polynomials Functions (Level B should do, standard form, leading coefficient, classification and describe end behavior only) (Level A should do the same as Level B + briefly sketch of polynomial graphs)
- 3-2: Adding, Subtracting and Multiplying Polynomials
- 3-4: Diving Polynomials
- 3-5: Zeros of Polynomials Functions
- 3-6: Theorems about roots of Polynomials Equations (Level A Only)

Before NJGPA: January

- Alg1: Topics
 - Average Rate of Change (including word problems)
 - Identifying Linear and Nonlinear Functions (Brief)
 - The Slope Formula (Brief)
 - $\circ~$ Slope Applications.
 - Graphing equations in y = mx + b
 - Writing equations from graphs, points and Tables in y = mx + b
 - Deciding if a point lies on a line (brief)
 - Graphing using intercepts (brief)
 - Linear Equation in y = mx + b Applications
 - o Solving Systems of Equations by Graphing (brief)
 - **Optional:** Solving Systems of Equations by Substitution.
 - o Graphing Linear Inequalities. (brief)
 - Solving Systems of Linear Inequalities
 - Literal Equations
 - Exponential Growth vs Decay (Identify initial value, growth/decay factor/rate)
 - o Write exponential functions from table (all in context/word problems)

MP 3

Before NJGPA: February

- Geo: Topics
 - \circ The Pythagorean Theorem
 - Pythagorean Theorem Applications.
 - o Trigonometric functions (only Sine, Cosine, Tangent to find missing sides)
 - Inverse Trigonometric functions (only Inverse Sine, Inverse Cosine, Inverse Tangent to find angles)
 - o Trig. ratios of similar triangles (using the similarity statements only)
 - Trig. Function and Inverse Trig Function applications.
 - o Word Problems involving angle of elevation/depression (brief)
 - Reflection, Translation and Rotation.
 - $\circ\;$ Dilations around the origin and not around the origin.
 - $\circ~$ Center of Dilation, Scale Factor and Conceptual Non-calculator Dilation questions

Before NJGPA: March

- Geo: Volume
 - o Calculate the Volume of Cones, Cylinders, Spheres, Rectangular Prism and Pyramids.(brief)
 - Volume applications (how many cones can fit inside a rectangular prism, etc.)
- Geo: Circles
 - o Central Angles, Intersecting Arcs and Arc Length of Sectors (brief)
 - Properties of Tangent Lines
 - $\circ~$ Inscribed angles

MP 4

After NJSLA: April to June

Topic 5 Rational Exponents and Radical Functions

- Optional: 5-1: Nth roots, radicals and rational exponents
- **Optional:** 5-2: Properties of Exponents and Radicals
- 5-6: Inverse relations and functions

Topic 6 Exponential and Logarithmic Functions

- 6-2: Exponential models (Compound interest, Half Life)
- 6-3 Logarithms
- 6-4 Logarithmic functions
- 6-5 Properties of Logarithmic Functions
- 6-6 Exponential and Logarithmic Equations

Topic 7 Trigonometric Functions (Only Level A, it is a Must for Pre-Calculus)

- 7-1 Trigonometric functions and acute angles (Finish the rest of trig ratios: Sec, Cot, Csc)
- 7-2 Angles and the unit circle
- 7-3 trigonometric function and real numbers
- 7-4 Graphing Since and Cosine

Topic 4 Rational Functions (Level A Only, if times allows it. It will be helpful for Pre-Calculus)

- 4-2 Graphing Rational Functions
- 4-3 Multiplying and Diving Rational Expressions
- 4-4 Adding and Subtracting Rational Expressions.