

# Eustace High School

## Pre-Calculus Objectives

### 1<sup>st</sup> Six Weeks

- Relations and Functions
- Composition and Inverses of Functions
- Area and Arc Length of a Circular Sector
- Right Triangle lengths and angles
- Circular Functions
- Trig Functions of Special Angles
- Law of Sines and Cosines
- Area of Triangles

### 2<sup>nd</sup> Six Weeks

- Discuss and Graph Trig Functions and their Inverses
- Amplitude, Period and Phase Shift
- Inverse Trig Functions
- Principal Values of Inverse Trig Functions
- Trig Identities
- Verifying Trig Identities
- Sum and Difference Identities
- Double Angle and Half Angle Identities
- Solving Trig Equations

### 3<sup>rd</sup> Six Weeks

- Conic Sections: Circle, Parabola, Ellipse, and Hyperbola
- Transformations of Conics
- Rational Exponents
- Exponential Functions
- The number  $e$
- Logarithmic Functions
- Exponential and Log Equations
- Natural Logs

### 4<sup>th</sup> Six Weeks

- Exponents and Radicals
- Polynomial and Factoring
- Rational Expressions
- Linear Equations
- Word Problem Applications
- Quadratic Equations
- Complex Numbers
- Miscellaneous Equations

### 5<sup>th</sup> Six Weeks

- Distance, Midpoint and Slope formulas
- Graphing Cubic and Square Root Equations
- Finding Equations of Lines
- Evaluating Functions
- Zeros of Function
- Synthetic Division
- Zeros of Polynomial Functions
- Find All Real Zeros

### 6<sup>th</sup> Six Weeks

- Systems of Equations
- Linear Systems
- Matrix Solution of Systems
- Review Trig Graphs
- Review Trig Identities
- Heaviside Method for Partial Fractions
- Finding Quadratic Equations from 3 points
- Finding Quadratic Equations given Min/Max and 1 point
- Summation

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