Portrait of an Abington Heights Mathematician

By the end of Precalculus, students will:

Functions and Their Graphs	Polynomial and Rational Functions	Exponential and Logarithmic Functions	Trigonometric Functions	Trigonometric Applications
☐ Graph and analyze functions and use their properties to make connections between the different representations ☐ Analyze functions and graphs of functions, including characteristics such as increasing/decreasing, odd/even, relative and absolute minima and maxima ☐ Recognize graphs of common functions and use rigid and nonrigid transformations ☐ Combine and compose functions ☐ Find and graph inverse functions	☐ Model real-life problems using quadratic functions ☐ Understand the relationship between zeros and factors of polynomials to make generalizations about functions and their graphs ☐ Analyze and sketch graphs of rational functions, including domain, range, asymptotes, and discontinuities	☐ Recognize, evaluate, and graph exponential functions ☐ Use exponential functions to model and solve real-life problems ☐ Recognize, evaluate, and graph exponential functions ☐ Use logarithmic functions to model and solve real-life problems ☐ Solve exponential and logarithmic equations	☐ Apply radian measure of an angle and the unit circle to analyze the trigonometric functions ☐ Extend the concept of similarity to determine arc lengths and areas of sectors of circles ☐ Choose trigonometric functions to model periodic phenomena and describe the properties of the graphs ☐ Prove the Pythagorean identity and use it to calculate trigonometric ratios ☐ Apply trigonometric ratios to solve problems involving right triangles ☐ Solve trigonometric equations, including using algebraic techniques, Pythagorean identities, and multiple angles	☐ Use fundamental trigonometric identities to evaluate trigonometric functions, and to simplify and rewrite trigonometric expressions ☐ Use the Law of Sines and/or the Law of Cosines to solve triangles ☐ Solve real-life problems using the Law of Sines and/or the Law of Cosines ☐ Find the area of oblique triangles