SECONDARY MATHEMATICS 3

Solve Algebraic Equations (polynomial, logarithmic, radical, rational, and trigonometric)

- Perform arithmetic operations on polynomials, extending beyond the quadratic polynomials and including rationals and understand the relationship between zeros and factors
- Solve polynomial, rational, radical, logarithmic and trigonometric functions

Understand, Compare, and Represent Functions (polynomial and inverse)

- Build on prior knowledge of functions, extend to polynomial, rational, trigonometric, logarithmic and inverse functions
- Create and interpret various representations of functions

Describe Characteristics of Functions

- Build on prior knowledge of key features and transformations of linear, quadratic and exponentials extending to all available function types as well as the normal curve to identify key characteristics

Extend Congruence and Similarity

- Build off prior knowledge of congruency, similarity and right triangle ratios extending the domain of trigonometric functions using the unit circle
- Apply trigonometry to general triangles

Mathematical Modeling

- Produce, interpret, and use expressions, equations and functions to model real-world phenomena
- Graph and analyze functions
- Relate characteristics of functions to graphical key features and quantitative relationships
- Apply geometric concepts in modeling situations

Mathematical Practices

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning