SECONDARY MATHEMATICS 2

Solve Algebraic Equations (linear, exponential, and quadratic)

- Rewrite and reveal aspects of expressions
- Create and solve equations, inequalities, and systems of equations, extending to include quadratic relationships
- Extend the number system to include complex numbers when real solutions do not exist

Understand, Compare, and Represent Functions

- Compare key characteristics of quadratic functions to those of linear and exponential functions
- Interpret different forms of quadratic functions
- Expand experience to include absolute value, step, and functions that are piecewise-defined

Describe Characteristics of Functions

- Interpret and analyze quadratic functions using different representations
- Build a function that models a relationship between two quantities
- Build new functions from existing functions

Prove Congruence and Similarity in Terms of Geometric Transformations

- Verify properties of dilations
- Decide whether two figures are similar
- Prove geometric theorems related to congruence and similarity
- Develop trigonometric ratios for sides of right 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