Pre-Calculus 11 Course Outline

Dover Bay Secondary

Text: Pearson Pre-Calculus 11 Worktext

Unit 1 – Radicals

- Students will be able to write a number as both a radical and power with a rational exponent
- Students will be able to apply the exponent laws with powers of rational exponents
- Students will be able to simplify radicals with numeric and/or variable radicands including the appropriate use of absolute value
- Students will be able to add, subtract, multiply and divide with radicals
- Students will be able to solve radical equations

Unit 2 – Solving Quadratic Equations

- Students will be able to factor polynomials with a leading coefficient other than one
- Students will be able to solve quadratic equations by factoring
- Students will be able to solve quadratic equations using the quadratic formula
- Students will be able to solve quadratic equations by taking square roots
- Students will be able to determine the number of roots of an equation using the discriminant

Unit 3 – Quadratic Functions

- Students will be able to define a function and work with function notation
- Students will be able to identify the characteristics of a quadratic function from the graph and various forms of the equation
- Students will be able to represent quadratic functions in various forms (graphical, table of values, equations)
- Students will be able to use graphs of quadratic functions to solve the corresponding equations
- Students will be able to convert between different forms of the equation of a quadratic function
- Students will be able to model and solve real-life problems using quadratic functions

Term 1 Review/Term 1 Exam

Unit 4 – Trigonometry

- Students will be able to equate the measure of an angle in standard position to the primary trigonometric ratios for angles from 0 to 360 degrees
- Students will be able to identify the primary trig ratios for special angles from 0 to 360 degrees without a calculator
- Students will be able to solve non-right angle triangles using sine law and cosine law, including the ambiguous case
- Students will be able to solve real-world problems using trigonometry

Unit 5 – Rational Expressions and Equations

- Students will be able simplify rational expressions by factoring
- Students will be able to multiply and divide rational expressions
- Students will be able to add and subtract rational expressions
- Students will be able to solve rational equations algebraically
- Students will be able to model and solve real-world problems using rational equations

Unit 6 – Inequalities

- Students will be able to solve a linear and quadratic inequality by graphing
- Students will be able to solve a linear and quadratic inequality algebraically
- Students will be able to represent the solution to an inequality in a variety of ways

Unit 7 - Financial Literacy

- Students will be able to differentiate between simple and compound interest with investments and loans and calculate interest earned
- Students will be able to understand and calculate interest earned or paid on annuities
- Students will be able to explain the differences between leasing and buying a car and house

Term 2 Review/Term 2 Exam

Final Review/Final Exam

Students will also be developing their skills in the following curricular competencies:

Reasoning and analyzing

• Use reasoning and logic to analyze and apply mathematical ideas
• Estimate reasonably
• Demonstrate fluent and flexible thinking of number
• Use tools or technology to analyze relationships and test conjectures
• Model mathematics in contextualized experiences

Understanding and solving

• Develop, demonstrate, and apply mathematical understanding through play, inquiry and problem solving
• Visualize to explore and illustrate mathematical concepts and relationships
• Apply flexible strategies to solve problems in both abstract and contextualized situations
• Engage in problem - solving experiences that are connected to place, story, and cultural practices and perspectives relevant to local First Peoples communities, as well as other cultures

Communicating and representing

• Communicate mathematical thinking in many ways
• Use mathematical vocabulary and language to contribute to mathematical discussions
• Represent mathematical ideas in a variety of ways
• Explain and justify mathematical ideas

Connecting and reflecting

• Reflect upon mathematical thinking
• Use mathematics to support personal choices
• Connect mathematical concepts to each other and to other areas and personal interests
• Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts

Evaluation: Each Term is marked as follows:
Quizzes: 10%
Unit Tests 65%
Term Exam 25%

The Final Mark is determined as follows:
Term 1 mark is weighted 37.5%
Term 2 mark is weighted 37.5%
The Final Exam is weighted 25%