

Course: Pre-Calculus 12

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Course Description:

This course is designed to support students in developing the mathematical understandings and competencies identified for entry into post-secondary programs that require the study of theoretical calculus. Curricular content expands functions and equations to include polynomial, exponential, logarithmic, and trigonometric. Students will explore reasoning, problem solving, communicating, connecting and reflecting within the content of this course.

Summer Learning Beliefs:

Summer Learning provides an engaging learning environment where all students can challenge themselves academically and fulfill their learning goals. To ensure this, students will:

- abide by the student Code of Conduct
- adhere to the Academic Honesty Policy
- adhere to the *Summer Learning* Student Engagement policy
- respect themselves and others
- attend every class and be punctual
- inquire, think, and participate to the best of their ability
- access technology in class when instructed to do so and for learning purposes only
- challenge themselves and have fun learning

All Summer Learning policies can be accessed at:

<https://www.sd44.ca/school/summer/policies/Pages/default>.

Course Syllabus:

Conceptual Understandings	Curricular Competencies	Content	Performance Task or Assessment
Transforming Graphs of Functions & Composite Functions	<ul style="list-style-type: none">• Connecting and Reflecting• Understanding and Solving• Communicating and Representing	<ul style="list-style-type: none">• Transformations of functions and relations	Initial Reflection (For connecting and reflecting) MS Forms Quizzes Problem Solving Session #1
Exponential and Logarithmic Functions	<ul style="list-style-type: none">• Reasoning and Modelling	<ul style="list-style-type: none">• Exponential functions and equations	MS Forms Quizzes Problem Solving Session #2

	<ul style="list-style-type: none"> • Understanding and Solving • Communicating and Representing 	<ul style="list-style-type: none"> • Logarithms: operations, functions, and equations 	
Trigonometry	<ul style="list-style-type: none"> • Reasoning and Modelling • Understanding and Solving • Communicating and Representing 	<ul style="list-style-type: none"> • Trigonometry: functions 	MS Forms Quizzes In-Class Trig Project
Trigonometric Equations and Identities	<ul style="list-style-type: none"> • Reasoning and Modelling • Understanding and Solving • Communicating and Representing 	<ul style="list-style-type: none"> • Trigonometry: equations and identities 	MS Forms Quizzes Problem Solving Session #4
Polynomial and Rational Functions	<ul style="list-style-type: none"> • Understanding and Solving • Communicating and Representing 	<ul style="list-style-type: none"> • Polynomial functions and equations • Rational functions 	MS Forms Quizzes Problem Solving Session #5
Summative of Learning	<ul style="list-style-type: none"> • Reasoning and Modelling • Understanding and Solving • Communicating and Representing • Connecting and Reflecting 	<ul style="list-style-type: none"> • Transformations of Families of Functions 	Final Project Final Reflection (For Connecting and Reflecting)

Celebration of Learning:

Grade Boundaries:

An “A” student will/can....

- Demonstrate the curricular competencies and apply them in situational contexts
- Analyze the information and synthesize the correct solution
- Discern challenging patterns
- Apply the concepts and extrapolate onto contextualized situations
- Demonstrate superb command of numeracy (no computational error)
- Solve challenging problems in familiar and unfamiliar situations

A “B” student will /can ...

- Demonstrate the curricular competencies and sometimes apply them in situational contexts
- Analyze the information and synthesize the solution
- Identify the complex patterns within the context of the problem

- Apply the concepts and understand some details in contextualized situations
- Demonstrate good command of numeracy
- Solve challenging problems in familiar and working towards unfamiliar situations

A "C" student will /can ...

- Demonstrate the curricular competencies
- Organize the information and attempt to interpret the solution
- Identify the patterns within the context of the problem
- Build on learned concepts but is still working on finding details in contextualized situations
- Solve routine two-step problems

Resources:

Resources
Pre-Calculus 12 MyWorktext - Pearson
Students will need a scientific and a graphing calculator (TI 83 or 84 is preferred)