

Welcome to Pre-calculus 12!

Throughout this course, you will explore three Big Ideas, Content and Curricular Competencies as set by the BC Curriculum [<https://curriculum.gov.bc.ca/curriculum/mathematics/12/pre-calculus>]. The three Big Ideas are:

- Using **inverses** is the foundation of solving equations and can be extended to relationships between functions.
- Understanding the characteristics of families of **functions** allows us to model and understand relationships and to build connections between classes of functions.
- **Transformations** of shapes extend to functions and relations in all of their representations.

Course Overview

Practice Assignments: Each unit is broken down into lessons and each lesson has a practice assignment accompanying it which includes an answer key and video solutions. You are required to complete and mark at least three quarters of each practice assignment (show your work). These assignments will be graded on completeness.

Send-In Assignments: The send-in assignments are a way for you to demonstrate what you have learned throughout the unit. No answer key is provided. They will be marked by your teacher and are worth 45% of your final grade. However, if you wish to complete corrections you may do so to improve your grade (grade will be calculated based on higher mark). Note: you may hand in each send-in assignment only once for corrections, and the corrections must be done on your own.

Tests: At the end of each unit there is a test, which is to be written in the classroom under supervision. You may bring in a cheat sheet on a single sided 8.5" by 11" piece of paper. You may have no help on your test. If you wish to improve your grade on a test, you may do corrections. If you do the corrections on your own you will receive up to an additional 10% on that test.

How To Be Successful

1. Take good, organized notes for your own reference as you learn new concepts.
2. Make sure that you understand and can do the problems presented in lessons.
3. Complete practice assignments after each lesson and compare your answers to the answer key.
4. Correct your mistakes!
5. Write a Unit test only after your send-in assignment has been marked, returned and corrected. That way you can use your send-in assignment as a review.
6. One-on-One Help is available! If you need assistance, please don't hesitate to contact me via email or phone to ask a question or to set up a one-on-one appointment. We can do this in person or we can meet online using Zoom. Remember, I am your teacher and I'm here to help.

Resources

- Content Connections online lessons: <https://apps.contentconnections.ca/ccltiprocess/>

Substantive Activity (Transformations)

In order to be officially activated in this course you must first complete a substantive activity. For this activity you will complete the send-in assignment for unit 1: "Transformations". In this unit, you will explore functions and their graphs; translate graphs of functions; reflect graphs of functions; compress & expand graphs of functions; combine transformations of functions; and find the coordinates of ordered pairs. The substantive activity covers a number of curriculum outcomes such as:

Big Ideas

- Understanding the characteristics of families of **functions** allows us to model and understand relationships and to build connections between classes of functions.
- **Transformations** of shapes extend to functions and relations in all of their representations.

Content

- **transformations** of functions and relations

Curricular Competencies

- Explore, **analyze**, and apply mathematical ideas using **reason, technology, and other tools**
- **Model** with mathematics in **situational contexts**
- **Think creatively** and with **curiosity and wonder** when exploring problems
- **Visualize** to explore and illustrate mathematical concepts and relationships
- **Explain and justify** mathematical ideas and **decisions in many ways**
- **Represent** mathematical ideas in concrete, pictorial, and symbolic forms
- **Connect mathematical concepts** with each other, with other areas, and with personal interests

Course evaluation:

Final Grade Course Calculator

Practice Assignments 10%	X 0.10 =
Send-in Assignments (including Substantive Activity 5.63%) 45%	X 0.45 =
Tests 45%	X 0.45 =
Final Grade	<input type="text"/>

Course Organization

The course content is divided into 8 Units as shown below with suggested times. Note that once the substantive activity is complete, you will have 16 weeks to complete the remainder of the course.

Unit	Suggested time (1 week = 7.5 hours)	Assessments	Weight	Mark
1. Transformations	15 hours (2 weeks)	Practice Assignments 1,2,3,4,5,6	1.25%	
		Send-in Assignment (Substantive Activity)	5.63%	
		Test	5.63%	
2. Radical and Rational Functions	15 hours (2 weeks)	Practice Assignments 1,2,3,4,5,6	1.25%	
		Send-in Assignment	5.63%	
		Test	5.63%	
3. Polynomials	15 hours (2 weeks)	Practice Assignments 1,2,3,4,5	1.25%	
		Send-in Assignment	5.63%	
		Test	5.63%	
4. Exponents and Logarithms	22 hours (3 weeks)	Practice Assignments 1,2,3,4,5,6,7,8,9,10	1.25%	
		Send-in Assignment	5.63%	
		Test	5.63%	
5. Circular Functions	22 hours (3 weeks)	Practice Assignments 1,2,3,4,5,6,7,8,9,10	1.25%	
		Send-in Assignment	5.63%	
		Test	5.63%	
6. Trigonometric Equations and Identities	15 hours (2 weeks)	Practice Assignments 1,2,3,4,5,6	1.25%	
		Send-in Assignment	5.63%	
		Test	5.63%	
7. Conics	15 hours (2 weeks)	Practice Assignments 1,2,3,4,5,6	1.25%	
		Send-in Assignment	5.63%	
		Test	5.63%	
8. Sequences and Series	15 hours (2 weeks)	Practice Assignments 1,2,3,4,5,6	1.25%	
		Send-in Assignment	5.63%	
		Test	5.63%	
		Final Grade	100%	