



PATTISON HIGH SCHOOL

We don't teach a class, we teach individual students in a class

Pre-Calculus 12

Timothy Chan

Winter 2025

Basic Information

Email: timothy.chan@pattisonhighschool.ca
Location: Room 109
Session: 8:45 am - 10:15 am (Short: 8:45 am - 10:00 am)
Office Hour: 8:15 am - 4:15 pm

Course Description

Pre-Calculus 12 is an academic course intended for students who will possibly enroll in post-secondary programs that require Pre-Calculus 12. Students who take Pre-Calculus 12 are expected to have a strong foundation of math skills from Pre-Calculus 11.

Big Ideas

- 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

Resources

Textbook: iWrite Pre-Calculus Mathematics 12 Book British Columbia Edition

Topics

Chapter	Content
1. Functions and Relations	Functions Review and Preview Absolute Value Functions and Radical Functions Composition of Functions The Inverse of a Relation - Part One The Inverse of a Relation - Part Two Operations on Functions
2. Transformations	Horizontal and Vertical Translations - Part One Horizontal and Vertical Translations - Part Two Reflections - Part One Reflections - Part Two Stretches about the x - or y -axis - Part One Stretches about the x - or y -axis - Part Two
3. Further Transformations	Combining Transformations - Part One Combining Transformations - Part Two Transformations of Radical Functions Transformations of Circles and Ellipses Transformations of Hyperbolas Transformations of Parabolas
4. Exponential and Logarithmic Functions	Review of Exponents Solving Exponential Equations with a Common Base Exponential Functions Logarithmic Functions Evaluating Logarithms Laws of Logarithms Combining the Laws of Logarithms Graphing Logarithmic Functions
5. Applications of Exponential and Logarithmic Functions	Solving Exponential Equations Applications in Finance Applications of Exponential Growth or Decay Solving Logarithmic Equations

	Logarithmic Scales and Applications
6. Geometric Sequences and Series	Geometric Sequences Geometric Growth and Decay Geometric Series Sigma Notation Infinite Geometric Series
7. Polynomial Functions	Polynomial Functions Using Long Division to Divide a Polynomial by a Binomial Using Synthetic Division to Divide a Polynomial by a Binomial The Remainder Theorem and the Factor Theorem Factoring Polynomial Expressions - Part One Factoring Polynomial Expressions - Part Two Investigating the Grapha of Polynomial Functions - Part One Investigating the Grapha of Polynomial Functions - Part Two Investigating the Grapha of Polynomial Functions - Part Three Polynomial Functions with a Leading Coefficient other than ± 1
8. Analyzing Rational Functions	Asymptotes Points of Discontinuity Graphs of Rational Functions
9. Trigonometry - Functions and Graphs	Angular Measure - Degrees Angular Measure - Radians Trigonometric Ratios Determining Angle Measure from a Trigonometric Ratio Special Triangles, Exact Values, and the Unit Circle Graphing Primary Trigonometric Functions Transformations of Trigonometric Functions - Part One Transformations of Trigonometric Functions - Part Two Sinusoidal Functions Modelling Sinusoidal Functions
	Solving First Degree Trigonometric Equations

10. Trigonometry - Equations and Identities	Solving Second Degree Trigonometric Equations Solving Equations Involving Multiple Angles Trigonometric Identities - Part One Trigonometric Identities - Part Two Sum and Difference Identities Double Angle Identities Using Identities to Solve Equations
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Expectations

Attendance

Students are expected to attend each class and notify the school if and when they have to be absent, giving a suitable reason for the absence.

Students should arrive at their classes on time and be prepared to study. They should not normally expect to leave the classroom near the beginning or end of class.

Clothing and Appearance

School clothing must be evident as the outer layer while in the classroom.

Body modification, in any of its forms, may not be suitable for the school community and may require a return to an original presentation.

Electronic Devices

Students must turn off their cell phones during class, and put them in their locker.

Ear buds and headphones are prohibited in the classroom, unless specifically allowed.

Attitude

In order to succeed, it is important that students pay close attention in every class, attend and participate in all class activities, do all homework assignments on time, and bring materials to class such as a printed English language dictionary, a binder in which to keep notes and papers, and stationary.

Language

The use of the English language at all times when in the classroom.

Classroom Environment

It is important to keep the classroom clean and tidy. Other than water, no food or drink is permitted in the classroom.

Honesty

Students always present work that is their own, original work - and not the result of cheating or plagiarism; the course is founded upon the trust in academic honesty.

Evaluation

Course Work	Percentage
Homework	20%
Quizzes	20%
Midterm	20%
Final Exam	40%
Total	100%