

Pre-calculus 12

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Course Description

Pre-calculus 12 is designed for students who have a particular interest in mathematics, or who have career aspirations in the fields of engineering, pure and applied science, economics, some business programs, or other areas requiring a higher level of mathematics. This is a demanding and challenging course. Topics in the course include geometric sequence and series, transformations, polynomial functions, rational functions, exponential and logarithmic functions, trigonometric functions, and identities.

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
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Course Materials

- A scientific calculator
- A binder or lined paper, or a notebook and file
- Microsoft Teams to find handouts, notes and announcements

Evaluation Scheme

Homework	10%
Quizzes	25%
Major Assignment	20%
Unit Test	25%
Final Exam	20%

****Any student caught cheating on homework, assignments, or tests will receive a 0 on the work. A second incident of cheating will result in parents and the principal being contacted****

*****Any student with an unexcused absence on the day of a test or quiz, will receive a mark of zero unless a note is provided from a parent, excusing the student from the missed class*****

Homework

I will check homework at the beginning of each class. I will give you one of the following marks.

0 --- incomplete, copied, or poor effort

0.5 --- complete, but poorly done OR about half of the questions are complete

1 --- a good effort was put into the homework, most of the questions are completed

Quizzes

I will have short quizzes about 1 or 2 times each week. The quizzes are for me to check your understanding, and for you to practice what you have learned.

EXPECTATIONS:

- Adhere to the academic integrity policy
- Contact your teacher when help is needed
- Review feedback from assignments and tests, where applicable
- Work to complete the course in a timely manner
- Communicate respectfully

Cell Phones and Technology in the Classroom

Please hand in your cell phone before the class begins. You are allowed to use it when you told to do so.

I expect to have your full attention during class, just like you expect to have my full attention when talking to me.

Cheating and Plagiarism

Plagiarism and cheating will NOT be tolerated. First offence everyone involved gets zero. Second offence everyone involved will be asked to leave the course. I will often ask you to work together, but you cannot copy each other's work. When working together, you must show all your work and have individual responses to questions.

And most importantly: Own your learning. At the end of the day, **YOU** are the one who controls your success in this course. Stay on top of your work, recognize when you need to ask for help, and give it your all.

Content

Unit	Topic	Content
1	Transformation	Horizontal and Vertical Translation Reflections and Stretches Combing Transformations Inverse of a Reflection
2	Polynomial Functions	Characteristics of Polynomial Functions The Remainder Theorem The Factor Theorem Equations and Graphs of Polynomial Functions
3	Radical & Rational Functions	Radical Functions and Transformations Exploring Rational Functions Using Transformations
4	Exponential and Logarithmic Functions	Characteristics of Exponential Functions Transformations of Exponential Functions Solving Exponential Equations Understanding Logarithms Transformations of Logarithmic Functions Laws of Logarithms Logarithmic and Exponential Equations
5	Trigonometry and the Unit Circle	Angles and Angle Measure The Unit Circle Trigonometric Ratios Introduction to Trigonometric Equations
6	Trigonometric Functions and Graphs	Graphing Sine and Cosine Functions Transformations of Sinusoidal Functions The Tangent Function Equations and Graphs of Trigonometric Functions
7	Trigonometric identities	Reciprocal, Quotient, and Pythagorean Identities Sum, Difference, and Double-Angle Identities Proving Identities Solving Trigonometric Equations Using Identities
8	Geometric Sequence and Series	Geometric Sequence Infinite Geometric Series