

Honors Precalculus  
Ad majorem Dei gloriam  
<http://faculty.muhs.edu/reis>

Marquette University High School  
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Course Description: This full year junior math course is fast paced and rigorous, covering almost two years of a typical college preparatory curriculum. Emphasis is on detailed analysis of functions leading to the introduction of limits. This course is designed for highly talented and motivated students and leads to Advanced Placement (AP) Calculus. Your placement into AB or BC calculus will depend primarily on your performance in this class.

Goals and objectives:

- To translate among tabular, symbolic, and graphical representations of functions.
- To analyze the effects of parameter changes on the graphs of linear, quadratic, polynomial, rational, radical, exponential, logarithmic, trigonometric, and polar functions.
- To apply trigonometry to problems involving triangles.
- To understand the connection between trigonometric and circular functions.
- To solve trigonometric equations and verify trigonometric identities.
- To understand the similarities and differences of sequences and series.
- To construct proofs for mathematical assertions by mathematical induction.
- To apply the process of mathematical modeling to real world problem situations
- To express mathematical ideas orally and in writing
- To appreciate the structure and connections within mathematics

Units of Study:

1. Quadratic Equations and Inequalities
2. Number Sets and Functions
3. Polynomial and Rational Functions
4. Exponential and logarithmic Functions
5. Trigonometric Functions
6. Analytic Trigonometry
7. Linear Systems and Matrices
8. Proof by Mathematical Induction
9. Conic Sections
10. Parametric Equations and Polar Graphing
11. Vectors and Analytic Geometry
12. Introduction to Limits

Class Materials:

- Textbooks:
  - *Algebra and Trigonometry for College Readiness* (Lial & Hornsby)
  - *Precalculus with Limits: A Graphing Approach* (Larson).
- Pencil and eraser
- Folder or binder for handouts and worksheets
- Notebook for math only
- TI-84 graphing calculator.

#### Behavior Expectations:

- Be ready by the second bell with all materials ready (especially notebook and pencil).
- Stay focused and quiet when explanations are given, even if you already understand.
- Raise your hand to ask or answer a question.

#### Computer Expectations:

- Notes are to be taken on paper unless a physical disability interferes
- Computers are only to be out when working on homework
- Computers are to be used only for mathematics work; if the assigned work is completed, computers may be used for other academic work
- Occasionally, with the teacher's permission, computers may be used during class
- A one-demerit penalty will be assessed for any student who violates any of these guidelines
- A student using a computer for non-academic work will receive a JUG.

#### Daily Homework:

- Homework will be completed using the WebAssign system. You must have purchased access to this system along with your textbook. Expect about 20-30 minutes of homework each evening.
- Homework assignments are graded for correctness. You have multiple chances to get the problem correct, but you should view your homework as take-home quizzes.
- Technology issues are not an excuse for not having your homework done. Plan accordingly.
- Late homework (even by a few minutes) will be penalized at my discretion.

#### Grading:

- **The standard MUHS grading scale (with D- at 60) will be used in this course.**
- Categories:
  - 40% Tests
  - 20% Quizzes
  - 20% Homework
  - 20% Final Examination
- Category weighting, not total points, is used for grading purposes, to ensure that these percentages are absolute, not approximate.

#### Availability for extra help (in order of my preference)

- Activity period (just about every day) in Room 304
- Prep / duty periods (TBD – see me if we can work something out)
- Lunch (assuming we have the same lunch period)
- Before school (you must let me know if I need to miss Mass --- Thursdays are best between 6:45 and 7:30)

#### Suggestions for success:

- Conflicts are best worked out student-to-teacher, not parent-to-teacher.
- Ask questions and clarifications as needed in class.
- Minimize absences (try to schedule appointments for a time OTHER than my class).
- Be aware that this is one of the hardest courses in the school and plan appropriately.