

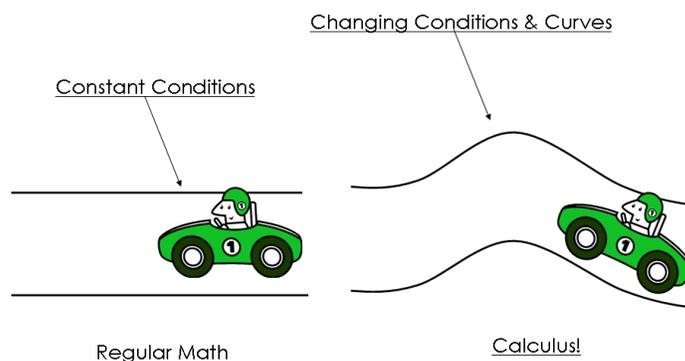
Precalculus, 2015 – 2016

Room 510

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Calculus is the study of change. This simple cartoon shows why calculus is so important; calculus allows us to see and understand things in the real world, where conditions change all the time. As the temperature goes up, what happens? Will that asteroid hit earth as our gravity begins to act on it? How will our profits change after this merger? These are the questions calculus answers. Precalculus is a foundational course to prepare you for calculus. Precalculus puts together all the arithmetic, algebra, geometry, and trigonometry you've learned to give you the building blocks to understand change around you.



Course Goals

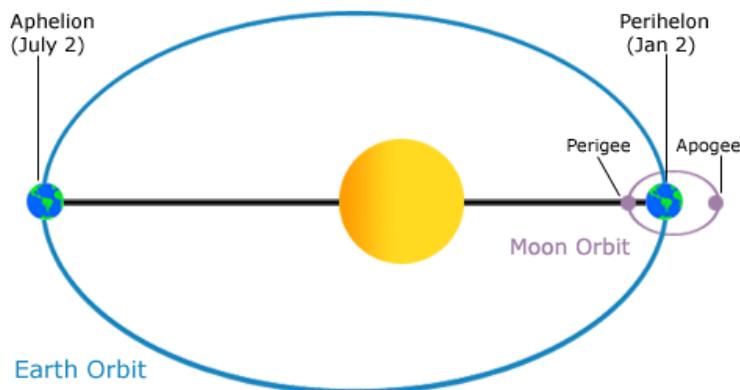
This is a problem-solving course. In addition to abstract formulae and diagrams, you will see our topics as they appear around us in word problems. This is important because this is how you'll understand why you're learning these things. The concepts we will cover will build up what you know about how the world is quantified and the skills will build up what you can do. Of course, they're related.

Scope and Sequence

The first half of our course will focus on trigonometry in all of its forms while the second half will allow you to develop your understanding of functions, how they work and what you can do with them. Our topics include:

- Radian Measure and the Unit Circle
- Graphing Trigonometric Functions
- Applications of Trigonometry
- Trigonometric Identities and Solving Equations
- Polynomials: Solving and Graphing
- Rational Functions
- Exponential and Logarithmic Functions
- Annuities and the Time Value of Money
- Conic Sections

This is not a test-prep course; however, you will answer real SAT questions this year to help familiarize you with the exam.



The orbits of all the planets, moons, and comets are conic sections.

Grading Outline

You will earn your semester grades according to the following breakdown:

Homework (10%):	Expect to have math homework after each class. A complete homework assignment shows evidence of thought, reasonable answers, and evidence that you checked your work. I will demonstrate how homework should be completed in order for you to learn from it best.
Classwork (10%):	You will have in-class assignments on a regular basis to help you acquire and practice new material and develop intelligent questions. Do your best.
Who You Are (5%):	Are you diligent? Are you engaged? Are you on time? Are you "showing up" in class?
HW Checks (20%):	These are small assessments (2-5 problems) given in class based on recent homework assignments. They are graded for accuracy. If you understand the homework, you'll do well.
Assessments (35%):	These are class-length opportunities to demonstrate what you know and what you can do based on the material you have learned in class. They are graded for accuracy.
Semester Exams (20%):	Assessments cumulative of the semester for you to demonstrate your command of all you have learned. There will be one in January and one in June. They are graded for accuracy.

The **only way** to earn a high grade in this class is to work diligently and ask questions when you have them. You will be able to see your updated grades frequently throughout the semester. You will learn more about this in the first week.

Textbook and Resources

We will be using a textbook this year, mainly for homework assignments:

Precalculus with Limits: A Graphing Approach
by Ron Larson. Brooks/Cole, 2012.

In addition to the book, you will need to take diligent notes in class. Information about supplies follows. There is a **website** for this class. Please go to www.mrtmath.org and create a Bookmark / Favorite. You will use this site often. Explore it. If you have constructive suggestions as to how to make it more useful, let me know.

You Need to Know

- **Questions** are learning that is about to happen. This is encouraged. Most questions are intelligent ones. Unintelligent questions are the ones that your peers just asked but you didn't hear because you weren't listening.
- **Homework** is due when it is collected. That sounds obvious. What I mean is that if the assignment is collected at the beginning of class, it's due at the beginning of class, not the end.
 - Note: Leaving a problem blank doesn't mean you tried it but couldn't finish it. Blank is the absence of effort. To me, it means you didn't try the problem. If you are genuinely confused about a problem but you still want (some) credit, you must write in words or draw a clear diagram what you are confused about, what you do know, where you get stuck, or how much you can do. It is not acceptable to write something like: "I found the angle measure but then I forgot the double angle formula for sine." That's what your notes, the textbook and website or the Internet are for. You can do it.
- We have a very limited amount of time to cover material people have been working on for four thousand years, so you can't afford to be **late to class**. Beacon regulations mandate that attendance is taken at the beginning of class. If you arrive after attendance is taken, you will be marked absent. If you miss a Homework Check because you were late, you will not be able to make it up. Be on time and be tuned in.
- **Late Work** generally doesn't fly. Turn things in when they're due. If you have a legitimate reason for something to be late, you will have known about it ahead of time (i.e. "I'm going to visit colleges."). If that's the case, contact me.
- **Trips to the bathroom** happen at lunch or during passing time. You can do it. You will not be allowed to go to the restroom during assessments. Please don't ask.
- If you were **absent**, the **work you missed** is due at the end of the week on which you return. For example, if you are absent on Tuesday but back in class on Thursday and Friday, then the homework from Monday night (which was due on Tuesday), the homework from Tuesday night and any classwork from Tuesday is due by the end of the day (2:35) on Friday. There is a folder in the room used to submit Absent Work. Use the website.
- Please be mindful of your **beverages in the classroom**. If you would like to have something to drink, make sure it doesn't become a distraction to you or your classmates. If you come to class late first period or after lunch with a brand new full beverage of some kind, that means it was more important to you than being on time to class. It will be thrown out. There is no eating in class unless you clear it with me for some legitimate reason. New York City school buildings have critters. We can't encourage them.

Supplies

For math class, you will need:

- one 1-inch 3-ring **binder** that is just for math class with a steady supply of lined and graph paper
- one **notebook** that is just for math class (spiral or marble/composition is up to you)
- **pencils** for both classwork and homework. All submitted work is to be done in pencil unless otherwise noted. The reason for this is that often people make mistakes; work needs to be done in pencil so you can erase to preserve the neatness of your work. If you do not have a pencil, you can buy one for a quarter. That's kind of expensive for a pencil, so be sure to have a supply.
- one or two red, blue, green, pink, whatever color you want **pens** you bring to class each day
- a **scientific calculator** that has trigonometric functions. More will be said about calculators early on.
- a small 4 or 6-inch **ruler** to be kept in your bookbag or binder that can be used at any time
- Please bring one package of print/copy paper. This is critical to our success this year. It counts as a homework assignment. Bringing a second package of paper is good for one extra credit homework assignment.

How Can I Be Successful?

That's the real question, isn't it? Come to class awake and prepared with your materials at the ready, always keep in mind to be present to what you are doing, stay focused on what you need to accomplish before the period ends, ask yourself: "What am I supposed to be getting out of this?" and then make it happen, and always give yourself your best effort. *Your present self is working for your future self.* Your Boss right now is the You from the future. Work hard.

The only place where **Success** comes before **Work** is the dictionary. Think about it.

Welcome!