

Precalculus Syllabus

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Room: 313
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Text: Precalculus. Sullivan. 8th Edition.

Classroom rules and procedures:

Students are expected to be on time, be prepared and be respectful. Disruptive behavior and/or use of foul language in class will not be tolerated. Parents of students that do not follow these guidelines and rules will be notified and may be required to come to school for further discussions.

Course Description:

This course will provide students with a more in-depth study of topics from their previous high school math courses, in addition to using those topics as the basis for further mathematical analysis. The course will cover a wide range of topics: from graphing linear and quadratic functions to piecewise functions; from exponentials, logarithmic and trigonometric functions to sequences, series, combinations and permutations. Throughout the year, students will be asked to think critically about both real world and abstract situations that will be modeled by advanced algebraic functions and expressions. This course will better prepare students for their college math courses.

Course Objectives and Expectations:

High School Algebra courses seem to be all about equations and variables, squares and square roots... however, the most practical objectives in these courses are not found within math text books or in unknown quantities. While Algebra I and Advanced Algebra deal with all of those topics (and others) in great detail, they are not nearly as important as the logical, reasoning and problem-solving skills you will develop. Math courses are the best tools to teach you how to learn—a necessary skill you can use for the rest of your life. Like riding a bicycle, once you learn how to learn, it's nearly impossible to forget.

As a student in Algebra, there are certain things that are expected of you; just as you expect certain things of me as your teacher. You expect me to show up every day, on-time, and ready to teach; I expect you to show up every day, on-time, and ready to learn. Expectations don't stop there, though. That is just the beginning. There is a lot of work to be done over the next nine months. When you leave this classroom in June, you will be an expert in algebraic concepts. You will do this through hard work, dedication, relying on your peers and relying on your teacher to help you further your understanding of the following skills and concepts:

Course Outcomes

1st Quarter

students will be able to...

- use the distance formula
- use the midpoint formula
- solve absolute value equations
- graph equations (linear and quadratic) by plotting points
- determine a graph's symmetry to either axis
- calculate and interpret slope of a line
- understand properties of horizontal and vertical lines
- write the equation of a line in slope-intercept form
- find equations of parallel and perpendicular lines

3rd Quarter

students will be able to...

- identify polynomial functions and their degree
- graph polynomial functions
- analyze the graph of a polynomial function
- determine the domain of rational functions
- analyze the graph of a rational function
- form composite functions
- determine the inverse of a function
- evaluate and graph exponential functions
- evaluate and graph logarithmic functions
- solve logarithmic and/or exponential equations

2nd Quarter

students will be able to...

- determine the domain and range of a function
- perform operations on functions
- work with properties of functions to determine even/odd, increasing/decreasing and local maxima/minima
- graph piecewise functions
- solve applied problems involving quadratic functions
- solve systems of linear equations

4th Quarter

students will be able to...

- convert between decimals and degrees, minutes, seconds
- determine arc length
- convert between radians and degrees
- use the unit circle to determine exact values of trigonometric functions
- graph trigonometric functions
- solve systems of equations using matrices
- perform row operations on a matrix
- evaluate a determinant
- solve a system of equations using an inverse matrix

Tardy Policy:

- 3 tardies = detention from teacher/teacher contacts parents. Every additional tardy = another detention.
- If student skips detention they will be referred to the dean for further disciplinary actions.

Cutting class is not acceptable. Students who cut class will receive the following consequences:

- missed work can not be made up -- you will take a grade of "0"
- a phone call home will be placed immediately, informing a parent or guardian of your truancy and requesting a parent-conference
- a write up will be submitted to the dean, documenting the cut

Assessments

** Students will be assessed multiple times throughout each unit. Every unit will have multiple quizzes and an end-of-unit exam, to allow students to demonstrate mastery of the skills and concepts covered in the unit.*

** There will be a summative exam given every fifth week, which will ask students to demonstrate mastery of skills taught during that period.*

** The semester's final exam will cover all information taught during the semester.*

Grading Scale

90 – 100 = A 80 – 89 = B 70 – 79 = C 60 – 69 = D 59 and below = F

Your grade is made up of:

Participation & Practice [10%]

The work we do every day is important, and to ensure that you are focused on your work, I will randomly spot check the room to see who is working and who is not. At the moment I check, you will either receive a grade of 100 or 0 for Participation and Practice for the day. I will often re-check the class throughout the period and you can earn some of your lost points back by remaining focused on the task(s) at hand.

Homework [10%]

Homework will be assigned three to four times per week. Homework is an integral part of this course. Just like a basketball player can't get better without practice, a math student can't get better without homework. Assignments will be reviewed in class the following day and corrections can always be made and turned back in.

Binder [10%]

You are required to maintain a binder that only contains material for this course. It must be at least 1.5 inches thick and must contain dividers. You must keep track of your notes, quizzes, tests, homework and vocabulary here. Notes must be in the AVID/Cornell Notes style. Failure to use Cornell Notes will result in a 50% reduction of your binder grade. Binders will be checked periodically throughout the semester.

Exams [30%]

You will take a cumulative exam every 5th week. These exams may be multiple choice, show-your-work or a combination of the two. They will cover the major topics and concepts from the previous five weeks, as well as other important topics from earlier in the semester. Students will be given an opportunity to make up low exam scores through after-school tutoring and test re-takes.

Quizzes [40%]

Quizzes are generally given up to twice a week, usually on Wednesdays or Fridays. These quizzes are to test the essential skills necessary to be successful in this course. Students who do not show mastery of these essential skills will be required to stay for after-school tutoring and/or other remediations if necessary.

Overwhelmed? Stuck? Ready to give up?

Then you need to come and speak with me immediately during non-class times when we can have a discussion. If a student is coming to me one or two weeks before the marking period ends than they have waited too long! The minute a student feels they are falling behind it is imperative that they come to speak with me so together we can determine a plan to ensure their success. In addition, the textbook has a cd-rom that you can put onto a computer to see worked out examples, additional examples and test-yourself quizzes.

