Advanced Precalculus 2023-24

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Rules and Procedures

1. Come to class prepared—have your notebook, pencils, and calculators for each class. Additionally, you may use your Chromebook if you so choose, but it should be used for academic purposes only. Using your Chromebook is a privilege, and that privilege, if abused, may be revoked.
2. Come to class on time.
3. Be respectful of yourself, your classmates, your teacher, and property. This includes following directions, not speaking while others are speaking, and handling complaints privately.
4. Participate actively during class, including taking part in class discussions, completing assignments, and getting help when needed. Do not wait until the last minute to get help.
5. At this time, eating is not allowed in the classroom. Drinks may be consumed at the discretion of the teacher. Only bring bottles or cups with lids—no open cups, aluminum cans, etc. Dispose of trash appropriately.
6. The only personal digital devices allowed in the classroom are calculators and Chromebooks. Cell phones should not be out at all during class unless permission is granted, and they should also be placed on silent (non-vibrating) prior to entering class. If a cell phone is seen out in class without permission, punitive consequences will ensue.
7. When absent, the student is responsible for checking Schoology and completing any assignments listed.
8. If a student misses a non-unit test assessment due to an excused, school-related, or pre-arranged absence, the unit test, if applicable, will be used as the grade for the missed assessment. If there is not a unit test, or if a student misses a unit test due to an excused, school-related, or pre-arranged absence, the nine weeks cumulative test will serve as the grade for the missed assessment. This procedure allows assessments to be returned and discussed in a timely manner, enhancing student understanding by receiving timely feedback. If a student is aware of an absence in advance, that student may speak with his/her teacher to schedule to take the assessment early as that does not affect the timely return of graded assessments. If a student is absent the day before an assessment but is present on the day of the assessment, he/she is expected to take the assessment that day.
9. In the grade book, an MA indicates a missing assignment that can be made up (for assessments, this means the unit or nine weeks test grade will replace it). A zero in the grade book indicates work that cannot be made up.
10. All work is to be done as independent work unless otherwise specified. Students are prohibited from unauthorized usage of artificial, algorithmic, decision-making tools for

any assignment. All work should be completed in accordance with the Mountain Brook Schools academic integrity policies.

Grading Policy

Grades will be determined on the total points method (total points earned divided by total points assigned). Grades for each nine weeks will come from tests, quizzes, and any other assignments. A nine weeks cumulative test will be given at the end of each nine weeks, and that nine weeks test may be used to replace a grade of your choice for that term; in the first and third nine weeks, that test also counts as a grade itself (that grade is used as a replacement score only in the second and fourth nine weeks, due to its proximity to a semester exam). A semester exam will be given at the end of the second and fourth nine weeks.

The grading scale is as follows:
A: 90-100
B: 80-89
C: 70-79
D: 65-69
F: 0-64

Homework

Homework will be on MathXL For School and/or given in-class. Though an explicit grade for homework will not be given, homework quizzes will be given on a weekly basis. Completion of homework is vital for a more thorough understanding of mathematical concepts.

Office Hours

Unless some urgent/pressing situation arises, I will be available in my room for help before 7:15 am Tuesday-Thursday and 1:30-2:00 pm Tuesday and Thursday. You may also make an appointment with me to see me outside of those times.

Contact

I may be contacted via my school e-mail address, kustosp@mtnbrook.k12.al.us.

For students:

- You may email me at this address from your school-issued Gmail account only—I will not respond to any student email from another source.
- I do not respond to emails sent to my school-issued Gmail account, so make sure to send email to the address above.
- Please include your first and last names in your email so that I will know with whom I am conversing.

For parents:

- Email is the best way to reach me. I will try to respond to emails within 24 hours.

Tentative Course Outline

Semester 1

I. Graphs (1)
   - Graphs
   - Algebra skill review

II. Functions & Their Graphs (2/3)
   - Functions & their graphs
   - Graphing & transforming functions
   - One-to-one functions
   - Piecewise functions
   - Linear & quadratic inequalities

III. Limits (14)
   - Graphical limits

IV. Polynomial & Rational Functions (4)
   - Polynomials, rational functions, & their graphs
   - Polynomial & rational inequalities

V. Exponential & Logarithmic Functions (5)
   - Composite functions
   - Inverse functions
   - Exponential & logarithmic functions
   - Applications & financial models

VI. Sequences & Series (12)
   - Sequences & series
   - Applications of sequences
   - Binomial Theorem

Semester 2

I. Trigonometric Functions (6)
   - Unit circle
   - Graphing trigonometric functions

II. Analytic Trigonometry (7)
   - Trigonometric identities
   - Trigonometric inverse functions
   - Trigonometric equations
   - Area enclosed by triangle (8.4)

III. Polar Coordinates/Vectors (9)
   - Polar coordinates
   - Polar graphs
   - Complex numbers in trigonometric form
   - Vectors
   - Dot and Cross Products

IV. Matrices (11)
   - Solving systems of linear equations using matrices
   - Determinants
   - Inverse Matrices

V. Analytic Geometry (10)
   - Conic sections (parabolas, circles, ellipses, hyperbolas)
   - Parametric equations

VI. A Preview of Calculus (14)
   - Graphical limits
   - Algebraic limits
   - Tangent & velocity problems
   - Continuity
   - Intermediate value theorem
   - Infinite limits/limits at infinity
   - Derivatives