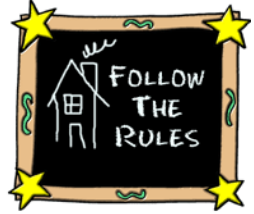# Mrs. PROST
CALCULUS

SUPPLIES
- ✔ Binder with dividers (recommended)
- ✔ Folder
- ✔ Pen/pencil
- ✔ Graphing Calculator

Classroom Expectations

- ✔ Be respectful
- ✔ Be prepared-bring supplies everyday
- ✔ Drinks must have lids…Snacks must be small, don't smell, don't require utensils
- ✔ Cell phones are not allowed
- ✔ This is an ADVANCED class.
  - o Expect to work HARD
  - o Get help as soon as you are confused…do NOT wait until the end of the unit

Classroom Procedures
- ✔ Be prepared to start class when the bell rings.
- ✔ Participation in class is expected.
  - o This course is double blocked…if you work diligently in class, your work outside of class will be minimal
  - o Time given to you to work during class is for calculus work only. This is not "your time." I expect you will be working on calculus the entire two periods.
  - o If I catch you working on another class, before your calculus work is completed, you will be issued a warning. After that, it will be a referral.
- ✔ It takes no more than 60 seconds to put your things away, please do not pack up early.

Absences, Make-up Work, & Tardies

- ✔ Good attendance is crucial to success in this class.
- ✔ It is the **student's responsibility** to obtain assignments after an absence.
- ✔ Make-up work should be turned in within 1-2 days after an absence. I will not accept it after one week.

AN ABSENCE THE DAY BEFORE A PREVIOUSLY ANNOUNCED QUIZ/TEST DOES NOT ALLOW POSTPONING THAT QUIZ OR TEST!

- ✔ The school tardy policy will be strictly enforced.

Grading

75%- Tests , quizzes, & FRQs
25%- Homework and miscellaneous assignments

I do not allow retakes on tests/quizzes. I will drop your lowest score (quiz or homework…**NOT TEST**) at the end of the semester.

ALL Homework is due the next day unless otherwise stated. Late assignments will be accepted until the Unit Test…no exceptions. Do NOT get behind…

<u>Free Response Questions (FRQs)</u>

50% of the AP exam is made up of FRQs. We will practice perfecting FRQ responses all year. These scores will go in the 75% test category. It is very common for scores on FRQs to be very low in the beginning. That is why we practice them all year. We will have plenty of grades in this category, so don't let a few low grades on FRQs stress you out.

<u>HELP!!!!!</u>

I am available on my conference periods (3&8) or afterschool. I also allow you to text me on REMIND. If I'm available, I will be happy to answer you. While I am always happy to help, if I am not available, I encourage you to use YouTube or Khan Academy to assist you. I personally like "Patrickjmt" on YouTube. This is a college level course. I will push you to be self-sufficient. There will be times you may need help that I am not available. I expect you to use other resources when I am unavailable.
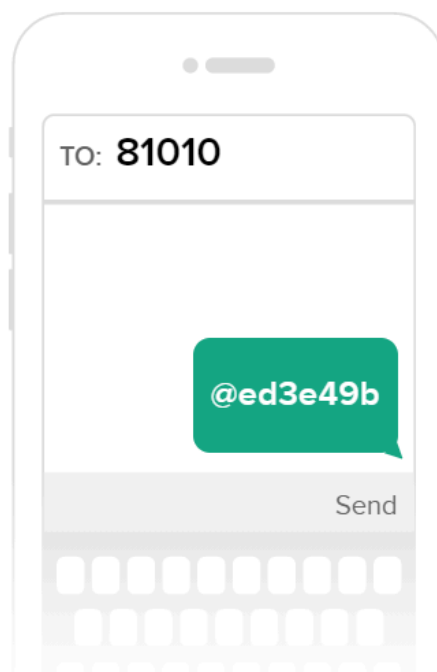
<u>Google Classroom</u>

6th/7th Hour: **ew3pj6e**

<u>Remind</u>

Tell people to text @ed3e49b to the number 81010

They'll receive a welcome text from Remind.

If anyone has trouble with 81010, they can try texting @ed3e49b to (618) 613-4188.

TO: **81010**

@ed3e49b

Send

Syllabus
Math 410A/ AP Calculus
RLC Math 1121/AP Calculus
B212

Instructor(s)
Nikki BauerProst
Office : A215
nbauerprost@mvths.org
618-246-2748

Course Description

he first semester of AP Calculus will include the study of elementary functions, properties of functions, and limits. It will also cover the study of differential calculus including the first and second derivative and applications of the derivative.

The second semester of AP Calculus will cover the study of integral calculus. This will include antiderivatives, applications of antiderivatives, techniques of integration, the definite integral and applications of the integral. Prerequisite: Precalculus or Trigonometry and College Algebra with a grade of A. Students may receive high school credit and Illinois college credit. Two credits.

Materials

Text: Calculus, Tenth Edition; Larson, Hostetler, and Edwards. Houghton Mifflin Publishing.
        Materials: Scientific calculator

IEP/504 Accommodations
Students with an IEP or 504 Plan *may* have individualized accommodations. There are some embedded features on Chromebooks which can help such as Google Read & Write (purple puzzle piece on the toolbar with an "rw") to read material aloud. Contact your teacher for due dates regarding extended time and to discuss accommodations.

Course Schedule or Outline
. A.   Review of Algebra – Prerequisites for Calculus
        1.   Coordinates, Increments, and Lines
        2.   Functions and Graphs
        3.   Trigonometric Functions
        4.   Shifts (horizontal/vertical), Circles, Parabolas
        5.   Absolute Values and Target Values
   B.   Limits and Continuity
        1.   Limits of Functions Values
        2.   Limits Involving Infinity
        3.   The Sandwich Theorem and $(\sin \Theta)/\Theta)$
        4.   Continuous Functions
        5.   Defining Limits Formally with Epsilons and Deltas
   C.   Techniques of Differentiation
        1.   Definition of the Derivative
        2.   Techniques for Finding the Derivative
        3.   Product and Quotient Rules
        4.   Derivatives of Trigonometric Functions
        5.   Higher Order Derivatives

      6.   Polynomial and Rational Functions
      7.   Chain Rule
      8.   Implicit Differentiation

D.   Applications of the Derivative
      1.   Average Rate of Change
      2.   Instantaneous Rate of Change
      3.   Equation of the Tangent Line
      4.   Continuity and Differentiability
      5.   Increasing and Decreasing Functions
      6.   Relative Extrema
      7.   Absolute Extrema
      8.   Rolle's Theorem
      9.   Mean Value Theorem
      10.   Concavity
      11.   Curve Sketching
      12.   Applications of Extrema
      13.   Related Rates
      14.   Differentials
      15.   Linearization's and Differentials
      16.   Newton's Method

E.   Integration
      1.   Antiderivatives
      2.   Substitution
      3.   Riemann Sums and Definite Integrals
      4.   The Fundamental Theorem of Calculus
      5.   Numerical Integration

F. Logarithmic, Exponential, and other Transcendental Functions
      1.   The Natural Logarithmic Function: Differentiation
      2.   The Natural Logarithmic Function: Integration
      3.   Inverse Functions
      4.   Exponential Functions: Differentiation and Integration
      5.   Bases Other than e and Applications
      6.   Differential Equations: Growth and Decay - OMIT
      7.   Differential Equations: Separation of Variables - OMIT
      8.   Inverse Trigonometric Functions and Differentiation
      9.   Inverse Trigonometric Functions and Integrations
      10.   Hyperbolic Functions

G. Some topics concerning area between two curves, volumes of solids of revolution, and arc length may be covered if time permits.

<u>Quarantine Learning Plan*</u>

*This plan is only available to students on an approved plan through the Nurse's Office
Check Google Classroom daily

Technology Assistance: Please contact Tech Services at 246-1812 or email Gina Williamson at
gwilliamson@mvths.org