

# Honors Algebra II

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2021 - 2022

1033 - Course Syllabus



# INSTRUCTOR



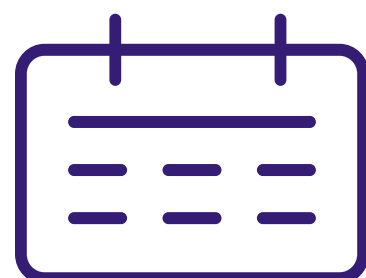
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## APPOINTMENTS

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3rd Floor, Room 316



By Appointment



Before School,  
During Lunch and  
After School



# **COURSE DESCRIPTION**

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Honors Algebra 2 is a year-long 10 credit course. It begins with connections back to students' earlier work, efficiently reviewing algebraic and statistical concepts that students have already studied while at the same time moving students forward into new content. In previous years, students have investigated mathematical ideas introduced in Algebra I by extending techniques to solve equations, and students' knowledge and library of functions by functions. There is an increased emphasis in Algebra II on modeling, operations with various expressions, algebraic properties, methods of solving equations, and systems of equations.

# Skills to be Mastered



Reading Skills



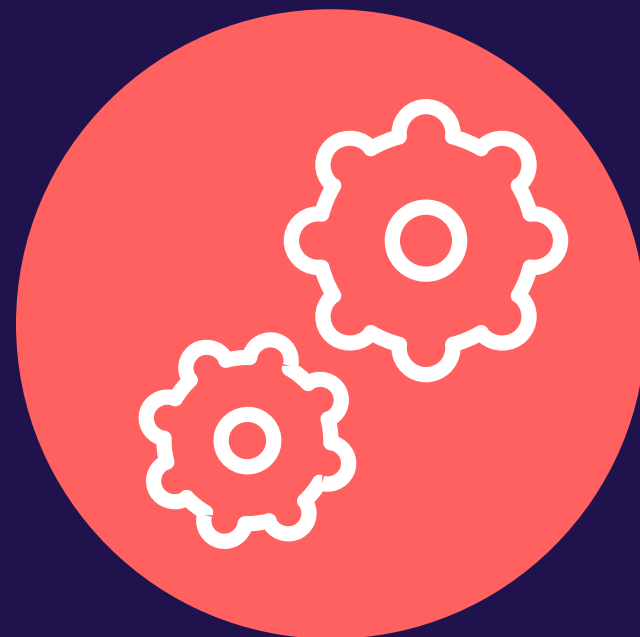
Problem-solving Skills



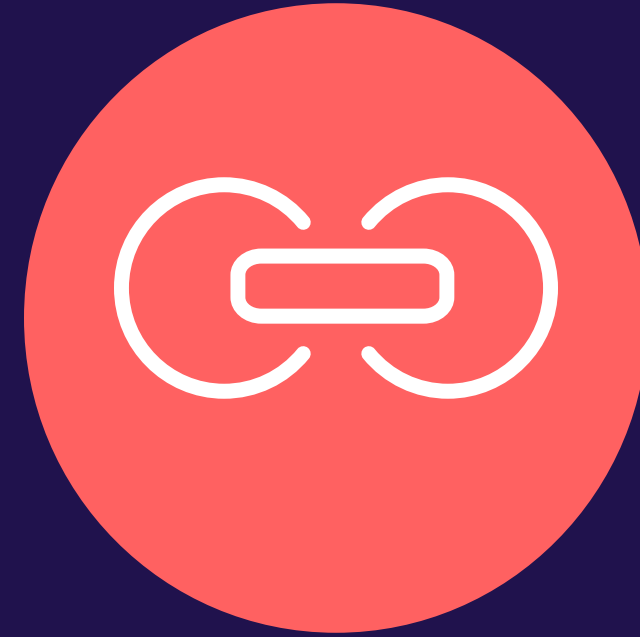
Writing Skills



Critical Thinking



Using appropriate tools strategically



Connecting Algebra to the Real World



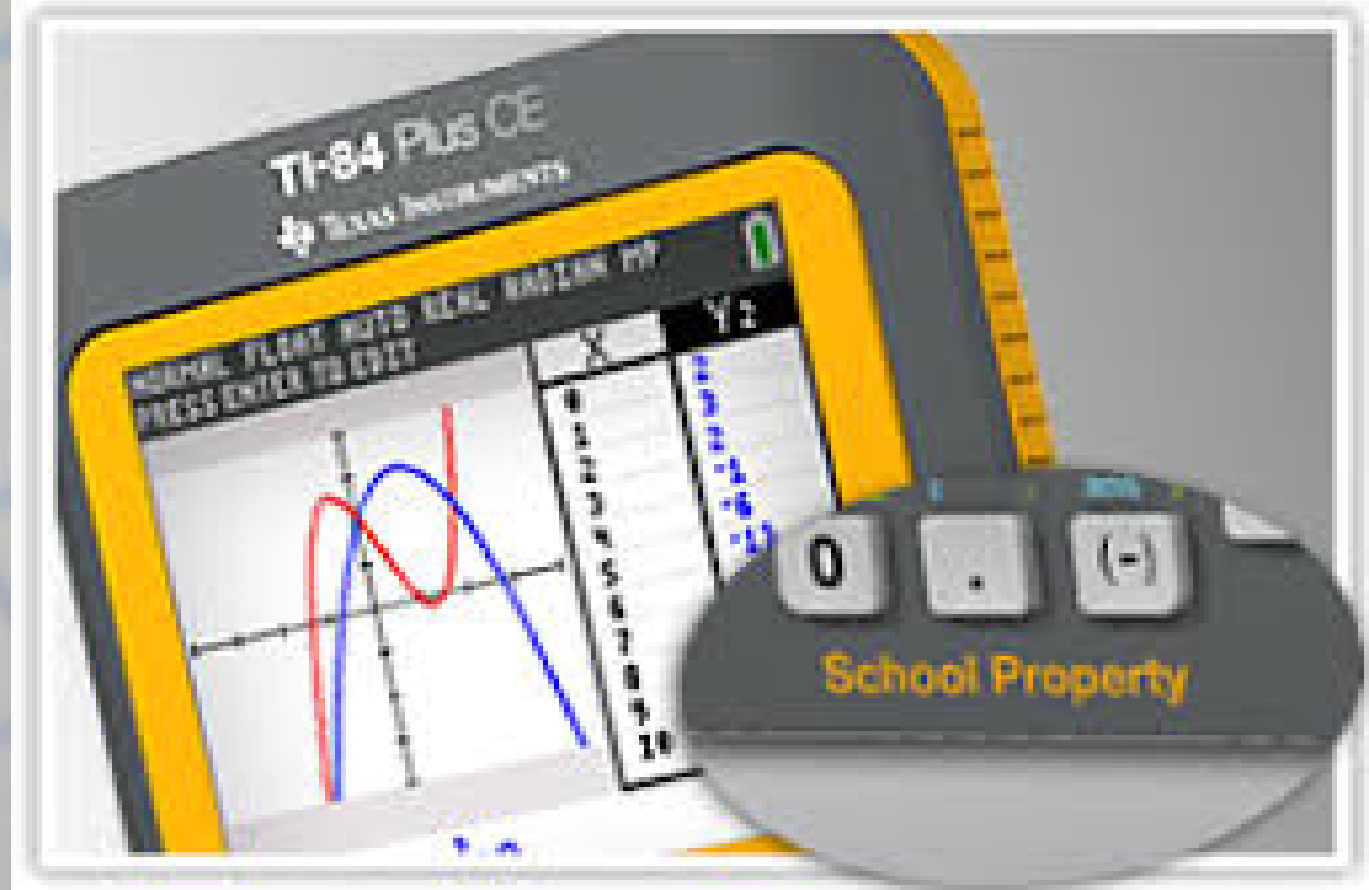
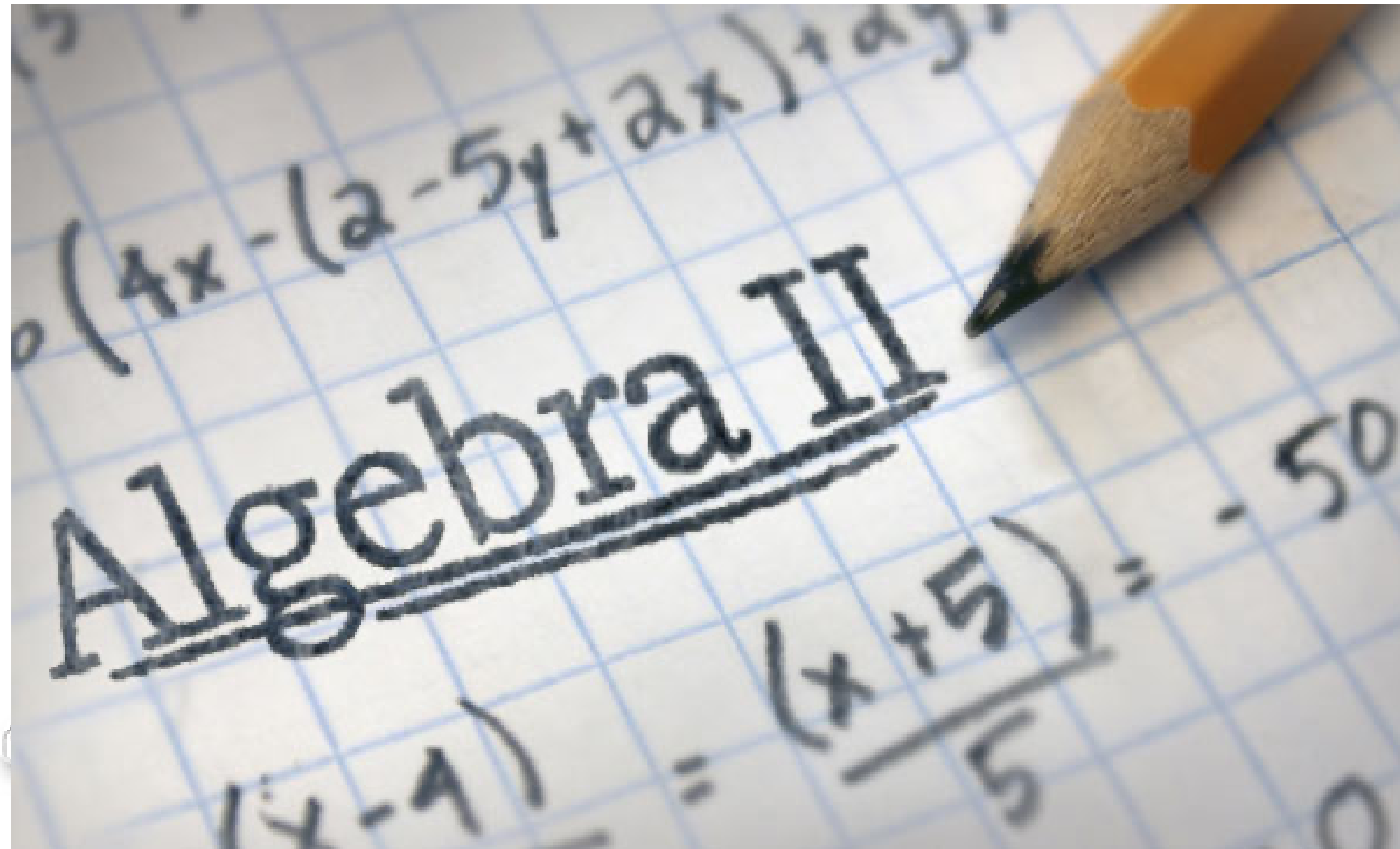
Mathematical Discourse



Teamwork

# UNITS OF STUDY

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① Polynomial functions and equations

② Building New functions

③ Sequence and Series, Exponential Functions, and Logarithmic Functions

④ System of Equations and Trigonometry



This year, before we go into our regular units, we will do a transition unit to fill in any gaps students may have, due to our virtual learning for the past 14 months. We will call it **Unit 0**.

## Unit 0: Transition Lessons

### Quadratic functions

- Given a vertex form of the quadratic function Solve simple quadratic equations (eg.  $X^2 = 49$ ,  $(x+2)^2 = 49$ ,  $x^2 - 2 = 2$ )
  - Re-write the standard form of a quadratic function in factored form
- Solve quadratic equations in standard form by factoring and sketch the graph to show key features.
  - Identify key features of the Quadratic equations in context
    - Graph vertex form
  - Re-Write standard form into vertex form

## Unit 1: Polynomial functions and equations

### Topics:

- Quadratic function and complex numbers
- Key features of cubic and quartic Polynomial function
- Long division of polynomials/Remainder theorem and solving cubic polynomials

## Unit 2: Building New functions

### Topics:

- Simplifying and solving simple rational functions
- Inverse function
- Transformation of the polynomial
- Even and Odd function
- Radical equation
- Equations with more than two unknowns

## Unit 3: Sequence and series, exponential function, Logarithmic function

### Topics:

- Arithmetic and geometric sequences and series
- Exponential functions
- Logarithmic functions
- Using Logarithms to solve equations and inequalities
- Rewrite expressions involving radicals and rational exponents using the properties of exponents.

## Unit 4: System of Equations and Trigonometry \*\*\*\*If time permits

### Topics:

- Trigonometric ratios (supplement materials)
- Radian to degree and vice versa
- Unit circle and the parent graph of sine, cosine.
- Key features of Trigonometric functions(Sine and cosine)
- Sketching trigonometric function (Sine and cosine)

# Materials List

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Required Materials: (needed every day in class)

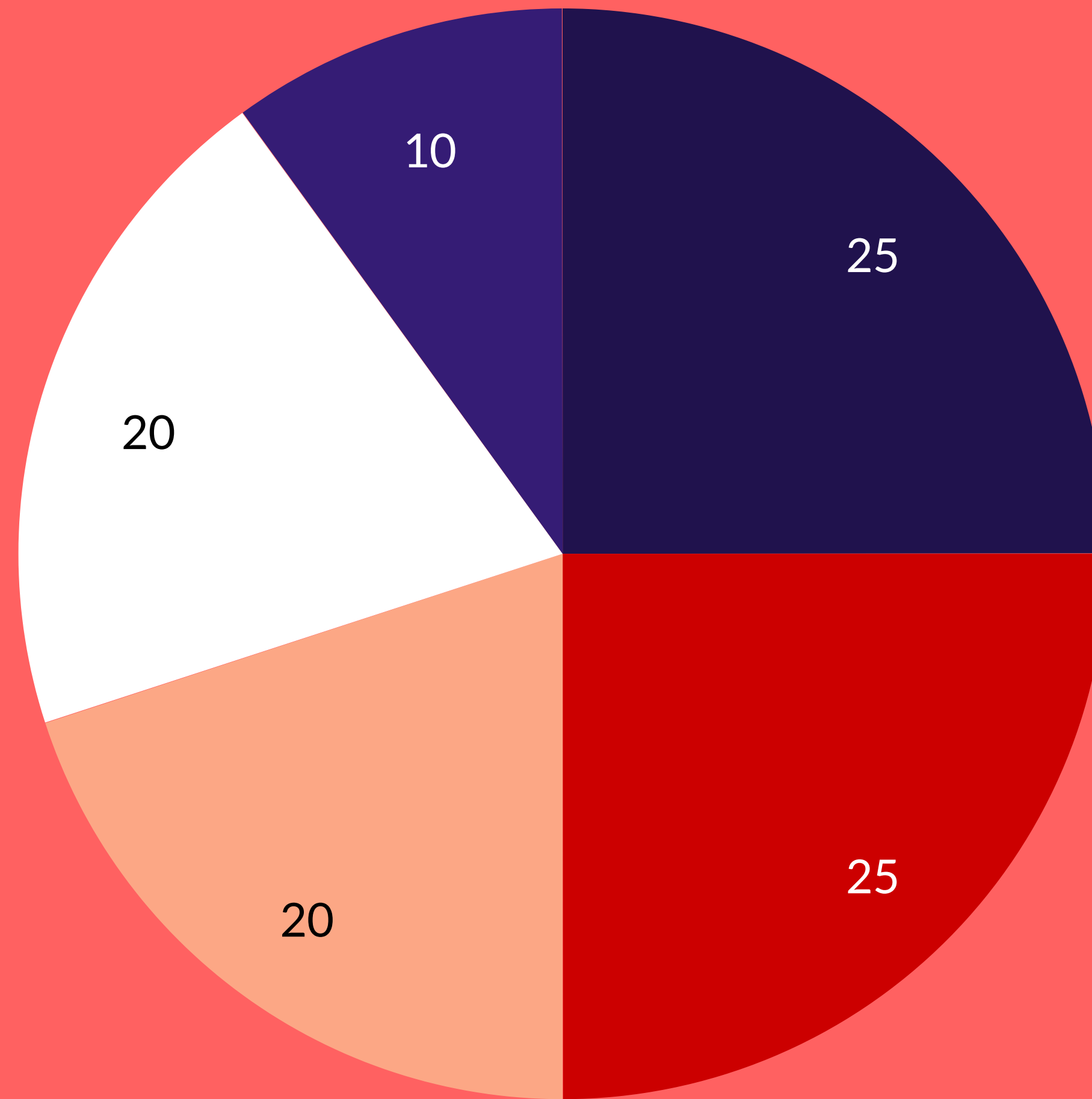
- o ALL WORKSHEETS/PACKETS THAT ARE GIVEN OUT
- o 1.5-inch VIEW BINDER (\$3.00)
- o Hole-punched REINFORCED loose-leaf paper
- o Hole-punched REINFORCED graph paper
- o Pencils (ALREADY SHARPENED) with erasers
- o Colored Pen
- o Divider to fit in your 3-ring binder
- o Sheet protectors FOR REFERENCE MATERIALS
- o 2 Composition Notebooks
- o Planner/Agenda Book
- o Ear buds or headphones for individual computer work
- o 1 portfolio folder that clips into your 3-ring binder
- o 1 box of tissue to contribute to the class



# Note

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A location for your child to access the Internet is also REQUIRED. There are many computer assignments built into the Algebra program we are using, as well as other programs we use daily. If you do not have access to the Internet at home, please work with your child ahead of time to determine where these assignments can be completed (a relative or friend's house, the library, a teacher's classroom or school computer lab, etc). Another option available is to use our Student Learning Chromebook Library. See me for form)



## GRADING

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Authentic Assessments	<b>25%</b>
Tests	<b>25%</b>
Classwork / Participation	<b>20%</b>
Quizzes	<b>20%</b>
Homework	<b>10%</b>

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**100%** 

# COURSE EXPECTATIONS

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## **P**REPARED

Be prepared, focused and ready to learn something new in every class.

## **R**ESPONSIBLE

Ensure all assignments are submitted according to deadline. Class attendance is also important to help students benefit from the course.

## **P**ROACTIVE

Engagement and participation in class is highly encouraged. Don't be afraid to share your thoughts!

## **R**ESPECTFUL

Be respectful towards teacher and classmates. Encourage one another and stay united as a team!

## I. Students are required to

- Meet district attendance policies.
- Meet district dress code policies.
- Participate in classroom activities and discussions on a daily basis.
- Complete **all** required assignments **on time**.
- Call a classmate or **text me** in your absence to find out what was missed.
- Keep an accurate and updated workbook and binder.
- Properly prepare for daily activities.
- Complete all computer assignments.

## II. Things to Remember

- **Attendance is Important:** Being absent one day is like missing two days of class. Also, being tardy means you will miss all or part of your “Opener” assignment. This can affect your grade.
- **Participation is Mandatory:** We do partner/group activities often, as well as engage in Mathematical discourse. Your daily participation is required.
- **Assignments Must Be Completed:** All class work is to be completed during class time, unless otherwise instructed. Homework must also be ready for the due date given. If you are absent, it is your responsibility to make up any missed assignments for the day. You are also required to complete that day’s assignment(s) so that you will be able to participate in discussion the following day.
- **Assessments Must Be Taken:** You are responsible for ALL assessments given. If you are absent, these assessments **MUST** be made up on your own time, after school. Please make arrangements with me. This is **your** responsibility.
- **Assistance is Available:** Having difficulties with something, have a question or concern, left your assignment in school; reach out to me. **DO NOT** wait until you come to class to say, “I did not understand,” or “I couldn’t find my work.” Ask for help **BEFORE** something is due, **NOT AFTER**. After is too late.



**Homework:** Homework will be assigned regularly in this course. Homework is a way to practice concepts covered in class, as well as help you retain skills over the course. Practice is essential for mastery and success. Without practice, without doing your homework, you will have a difficult time passing. Unless otherwise instructed, homework is due at the beginning of next class. It is your responsibility to turn in your homework on time. Homework done timely will help you assess your understanding and need for support.

**Class Work:** Students will have class work during every class. Whether it is individual work or group work, students are expected to actively work on these assignments. Class work may be collected at the end of the class to be graded for accuracy.

**Parents/Guardians, teachers and administrators will have the right to look at the students' notebook (binder) at any time. Therefore, students must always place their work in their notebook the day the work is given back to them.**

I may amend this syllabus during the school year. I wish you and your child much success this school year!

**Parents/Guardians are encouraged to contact me regarding any concerns regarding your child in my class. You can reach me at my email address. I will do my best to return emails within 24 hours.**

# CLASSROOM PHILOSOPHY



Complacency is the enemy of excellence. "In this class, we don't do easy. We make easy happen through hard work and learning."

Bringing out the best in every student and helping them to reach their fullest potential is the job of every teacher. Therefore, I am committed to helping every student to excel academically and to guide them to grow as a student and as an individual.

However, ultimately success comes from students who are motivated and willing to work hard, no matter what. So students **MUST** commit to doing their part. "No excuses, just results!"

Remember... "Good, better, best. Never let it rest. Until your good is better and your better is best." ~Tim Duncan