Class Purpose:
The purpose of this class is to prepare students for success at the next mathematical level, Precalculus. Students will learn critical thinking skills, perseverance, problem solving, and analytical skills to be successful at the next level.

Class Overview:
This course is designed for students who wish to further their algebra skills. Trigonometry and algebra topics will be examined numerically, analytically, graphically, and through applications. An important aspect of this course is the use of technology to enhance student learning and the development of the problem solving and communication abilities, which will be critical for student success in future math courses. This course is designed to provide the student with the trigonometry and algebra skills needed to be successful in a precalculus course.

Standards covered in S1:
- **Solve Polynomials**: HSPI 5: Use polynomial identities to solve problems. (HSA.APR.C)(A2.-APR.C), Math.11.ALG.pi5, Math.12.ALG.pi5
- **Complex Numbers Arithmetic**: HSPI 4: Perform arithmetic operations with complex numbers. (HSN.CN.A) Math.11.NQ.pi4, Math.12.NQ.pi4
- **Complex Numbers in Equations**: HSPI 6: Use complex numbers in polynomial identities and equations. (HSN.CN.C) Math.11.NQ.pi6, Math.12.NQ.pi6

Standards covered in S2:
- **Planer Transformations**: HSPI 1: Experiment with transformations in the plane. (HSG.CO.A), Math.9-10.GEO.pi1
- **Concept & Notation**: HSPI 1: Understand the concept of a function and use function notation. (HSF.IF.A), Math.9-10.Func.pi1
- **In Context**: HSPI 2: Interpret functions that arise in applications in terms of the context. (HSF.IF.B), Math.9-10.Func.pi2
- **Linear/Quadric/Exponential Models**: HSPI 6: Construct and compare linear, quadratic, and exponential models and solve problems. (HSF.LE.A), Math.11-12.Func HSPI 6
- **Trigonometric Functions**: HSPI 9: Model periodic phenomena with trigonometric functions. (HSF.TF.B), Math.11.FUNC.pi9, Math.12.FUNC.pi9

Standards covered all year:
- **Problem Solving**: PI 1: Make sense of problems and persevere in solving them.
- Abstract and Quantitative Reasoning: PI 2: Reason abstractly and quantitatively.
- Viable Arguments: PI 3: Construct viable arguments and critique the reasoning of others.
  - Model with Math: PI 4: Model with mathematics.
  - Tools: PI 5: Use appropriate tools strategically.
    - Precision: PI 6: Attend to precision.
  - Structure: PI 7: Look for and make use of structure.
- Repeated Reasoning: PI 8: Look for and express regularity in repeated reasoning.

**Major Assignments:**
- Daily homework

- Midterm Breakdown:
  - Part 1 - The written portion of the midterm will be an assessment covering all learning to date. The date will be determined and provided at a later time.
  - Part 2 - The project portion of the midterm will be a creation of videos designed to show understanding of various topics. The date will be determined and provided at a later time.

- Semester Final Exam Breakdown:
  - Part 1 - The written portion of the semester final will be an assessment covering all learning from the semester. The date will be determined and provided at a later time.
  - Part 2 - The project portion of the semester final will be a continued creation of videos designed to show understanding of various topics. The date will be determined and provided at a later time.

**Competency Based Learning**
Because mathematics is a constantly evolving learning process, competency based learning is ideal in this format. Students will be revising and learning constantly to eventually be able to show their understanding on the final exam and in their videos. Every aspect of their learning will help them find success on those assessments. All homework and class meetings are meant to lead up to a semester ending project/assessment. Learning is assessed throughout and they will always have chances to revise.

<table>
<thead>
<tr>
<th>Scoring Levels</th>
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</thead>
<tbody>
<tr>
<td>Emerging Proficiency (E)</td>
</tr>
</tbody>
</table>

**Scoring Assignments and Assessments:** Progress scores on assignments will be updated daily/weekly, depending on the assignment. If it is a bigger assessment, I will assess it within a week. If it is a daily homework, I will assess it within 2 days. Please check Empower often to see progress. GRADING WILL BE FOCUSED ON EFFORT AND GROWTH. Completing the daily homework will lead to higher understanding of the material to be able to complete the larger assessments. It is essential that you keep up with the work!

**Habits of Heart & Mind:** The Habits of Heart and Mind are cross-curricular learning competencies that will be assessed in all of your courses, including this one. All of the habits are important to your
learning mathematics, but especially inquiry (always ask if you don’t understand), action (stay on top of things), and reflection (be willing to learn from your mistakes). Keep in mind that failing is not a bad thing - it allows us to move forward and find success. Be willing to try and try again!

**Scoring Rubrics**

Daily homework will be scored mainly for completion. It will be done online with our online textbook. The program will determine a grade on the traditional grading scales. Based on that, your student will earn either an H for highly proficient (85-100%), a P for proficient (70-84%), an N for nearly proficient (55-69%) or an E for emerging (below a 55% or not completed). While tests will also use the online textbook program, students will turn in their written work, where each problem will be graded on a 4 point scale. This is outlined below. Your understanding of your homework will ultimately lead to your success on the larger assessments, so the better you do on the daily homework, the better you will do later.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>4</td>
<td>Shows complete understanding of the problem (H)</td>
</tr>
<tr>
<td>3.5</td>
<td>Very small math error (H)</td>
</tr>
<tr>
<td>3</td>
<td>Overall understanding, but has a more major math error (P)</td>
</tr>
<tr>
<td>2.5</td>
<td>Shows understanding of content, but has at least 2 minor math errors (P)</td>
</tr>
<tr>
<td>2</td>
<td>Shows some understanding, but is unclear or has 3 math errors (N)</td>
</tr>
<tr>
<td>1.5</td>
<td>Shows some understanding, but has multiple errors throughout (N)</td>
</tr>
<tr>
<td>1</td>
<td>Attempted, but shows little understanding (E)</td>
</tr>
<tr>
<td>0</td>
<td>Left blank or shows no understanding (E)</td>
</tr>
</tbody>
</table>

**Course Grade**

In order to better support competency based efforts, teachers at City High School will generate course grades (A, B, C, or F) only at the end of each Semester. Here is the course grade rubric teachers will use to assign letter grades at the end of each semester.

<table>
<thead>
<tr>
<th>Semester Course Grading Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
</tr>
<tr>
<td>Show Proficient on learning standards for the course by the end of the semester</td>
</tr>
<tr>
<td>Performance on one or more standards for the course are ‘Highly Proficient’</td>
</tr>
<tr>
<td>All assignments are completed/revised as needed</td>
</tr>
<tr>
<td><strong>B</strong></td>
</tr>
<tr>
<td>Show Proficiency on at least 80% of learning standards for the course by the end of the semester</td>
</tr>
<tr>
<td>Show ‘Nearing Proficiency’ on all other learning standards that are not yet at ‘Proficient’</td>
</tr>
<tr>
<td>All but a few assignments are completed/revised as needed</td>
</tr>
<tr>
<td><strong>C</strong></td>
</tr>
<tr>
<td>Show Proficiency on at least 80% of learning standards for the course by the end of the semester</td>
</tr>
<tr>
<td>Show ‘Nearing’ or ‘Emerging’ Proficiency on all other learning standards that are not yet at ‘Proficient’</td>
</tr>
<tr>
<td>Most assignments are completed/revised as needed</td>
</tr>
<tr>
<td><strong>I</strong></td>
</tr>
<tr>
<td>Show Proficiency on at least 50% of learning standards for the course by the end of the semester</td>
</tr>
</tbody>
</table>
Show ‘Nearing’ or ‘Emerging’ Proficiency on all other learning standards that are not yet at ‘Proficient’

Less than 50% of the assignments are incomplete/missing

NOTE: Incompletes can also be issued to students who need to complete one or two major assessments that would make the difference between a passing grade (A, B, or C)

F
Less than 50% of the learning standards for the course by the end of the semester are ‘Proficient’

More than 50% of the assignments are incomplete or missing

**Required Materials:**
- Computer and wifi
- my.hrw.com username/password

**Suggested Materials:**
- Graph paper
- Colored pencils
- TI-83 or TI-84 Graphing calculator (but can use online programs)
- Lined paper
- Pencils
- Ruler

**Academic Integrity:**
Students must be responsible and accountable for their own learning. Students are responsible for completing their own work. There is no room for cheating or plagiarism. If students are guilty of cheating or plagiarism, they will have to redo the assignment to demonstrate proficiency. Everyone involved will receive communication with parents/guardians and administrative referral to the Dean of Students for follow up.

**Note from KC**
Your success depends on your commitment, determination, and perseverance. If you are having difficulty, do not wait to ask questions, come to me for extra help or find a study group or tutor. Mathematics tends to be a sequential process and every lesson will require understanding for there to be total success in future lessons.

Expect practice everyday in and out of class. Your understanding of the material is directly related to your successful completion and understanding of the practice work and class work. Problems should be copied when possible and work shown.

Class attendance is crucial. Even when you have an excused absence or excused tardy you can make up the problems, but you miss the essential ‘why’ connections. Also class participation is required to be successful. You will need to come to class prepared to actively engage in coding and to ask questions.

**I will help you in every way I can, but success starts with you.**
I am going to enjoy getting to know each of you and teaching each of you this year.