

Advanced Algebraic Concepts 2020-2021

Course Information	
Instructor: Chris Walters Phone: (425) 385-7132 email: cwalters@everettsd.org Extra Help Hours: 7-7:30 AM and 2 – 3 PM	Textbook: Illustrative Mathematics Online Resources: im.kendallhunt.com Class website: http://www.everettsd.org/jhs-cwalters All instructional materials can be accessed through Canvas

Course Description

The third year of high school mathematics asks students to pull together and apply the learning that they have from years 1 and 2. They apply methods from probability and statistics to draw inferences and conclusions from data. Students expand their repertoire of functions to include polynomial, rational, and radical functions. They expand their study of right triangle trigonometry to include general triangles. And, finally, students bring together all their experience with functions and geometry to create models and solve contextual problems.

Learning Outcomes

- Know 5 general functions: Polynomial, Rational, Exponential, Logarithmic, Trigonometric (sine, cosine, tangent)
- Analyze functions to include: domain, range, intercepts, end behavior, symmetry, and asymptotes, vertex, line of symmetry, amplitude, period, and phase shifts
- Sketch graphs of functions and their transformations with and without technology
- Solve equations numerically, algebraically, and graphically: polynomials, rational, radical, exponential, logarithm and trigonometric (radians)
- Compute with complex numbers: addition, subtraction, and multiplication
- Write recursive definitions and explicit formulas using function notation
- Find values for arithmetic/geometric sequences
- Analyze data using normal distributions, histograms, and margin of error
- Make and justify conclusions bases on data.
- Model various situations using sequences and functions (polynomials, exponential, logarithmic and trigonometric)
- Appropriately use a modeling cycle/process

Course Outline

1. Sequences and Functions	4B. Exponential Functions and Equations (Logarithmic Functions)
2A. Polynomials Functions	5. Transformations of Functions
2B. Rational Functions	6. Trigonometric Functions
3. Complex Numbers and Rational Exponents	7. Statistical Inferences
4A. Exponential Functions and Equations	

Grades: <http://www.everettsd.org/lms>

Classwork/Assignment: 15% Unit Tests and Projects: 85%

Letter Grade	A	A –	B +	B	B –	C +	C	C –	D +	D	F
Percent	100-93	92-90	89-87	86-83	82-80	79-77	76-73	72-70	69-67	66-60	59-0
GPA	4.0	3.7	3.3	3.0	2.7	2.3	2.0	1.7	1.3	1.0	0.0



Our mission is to provide a rigorous curriculum that sets high standards
and prepares all students for the future.

Classroom Policies & Expectations

Grading Policy

Mathematical Explanation for all problems: (may include the following but is not limited to)

- Algebraic steps
- Verbal explanations
- Graphs, tables or pictures that are clearly labeled.
- Calculator entries, when using a calculator for computation.
- If using theorems, properties, or definitions with conditions, you must confirm the need conditions are met.
- Correct standard mathematical notation should be used.
- Decimal answers should be accurate to 3 places.
- Final answers can be equivalent to those provided in answer keys.

Classwork/Assignments (5 points each):

Expect daily assignments to practice concepts taught.
Late assignments will be accepted until unit test.

- Assignment turned in on time
- Assignment 100% complete
- Mathematical explanation for each problem
- Assignment corrected (different color ink)
 - Each problem marked right or wrong
 - Errors are corrected or a question is asked.
- Presentation is neat and organized

Assessments (weighted to 100 points):

Comprised of calculator and non-calculator questions

- If you are absent the day before a test, you will still be expected to take the test.
- All tests must be completed on the day they are started.
- Multiple Choice questions: 2 points each
- Short answer questions: 5 points each
 - Correct Solution (2 points)
 - Mathematical Explanation (3 points)

Test Correction Privileges:

- Students who are absent (unexcused) on the day of the test will lose the privilege to correct that test.
- Student must complete the test correction form before the next unit test.
- Corrections will earn back $\frac{1}{2}$ the points missed up to 85%.
- Must be completed in the classroom and not during class time, unless all required daily work is complete.

Extra Credit Opportunity:

- Bonus percentage points will be added to each unit assessment for the unit's assignments.
- Overall assignment score of 97% or higher earns 3% bonus on unit assessment, 87% or higher earns 2% and 77% or higher earns 1%

Behavior Expectations

- All school wide and district policies as described in the Student Handbook will be enforced.
- Students are expected to be respectful towards their peers, teacher and classroom.
- **No Electronic Devices** (cell phone, headphones, etc) will be allowed during class, except a calculator and a district issued device or equivalent without permission from the teacher.
- Drinks are allowed as long as the bottle has a closable lid (spill proof).
- Food is **not** permitted, unless required for medical reasons.

Materials

- Notebook (paper or digital) of your choice to keep your notes and classwork organized.
- Scientific calculator required. A graphing calculator, such as the TI-83+ or TI-84 is highly recommended and is required for AP courses.

Tips for Success

You can learn mathematics, but it won't happen by itself. You will have to work at it!

1. Participate in class.
2. Take and review your notes each day.
3. Attempt all problems assigned and ask about the questions you don't understand.
4. Come in for additional tutoring when you first start to struggle.