The mission of Hermon High School is to prepare students for personal success in college, work, and community.

Senior Math

Instructors: Name **contact info**
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Prerequisite:

Open to seniors who have taken Algebra II.

Description:

This course is designed for fourth year students who do not plan to study a math/science/technical field beyond high school. The course will review topics of Algebra I, Geometry, and Algebra II. Students will also be expected to demonstrate proficiency with computation and basic concepts without the use of a calculator. Applications (especially understanding word problems) will be emphasized. Students will receive instruction on and practice with college placement exams such as the Accuplacer used by area post-secondary institutions. Students will be responsible for research and writing on several independent math topics as preparation for college.

Graduation Standards

1- Reason and model quantitatively, using units and number systems to solve problems.
2- Interpret, represent, create and solve algebraic expressions.
3- Interpret, analyze, construct, and solve linear, quadratic, and trigonometric functions.

Unit 1	**Computation Fluency**
Summary	Operations in the real number system including integers, fractions, decimals. Order of operations. Focus will be computing without a calculator, recognizing equivalent fractions and mixed numbers, ordering and estimating.
Performance Indicators Assessed in Unit	1B – Apply properties within the real number system. 1C – Reason quantitatively. 2A – Interpret the structure of expressions.
Unit 2	**Applications with Fractions, Ratios and Percents**
Summary	Real world word problem solving involving fractions, ratios and percents. Topics include rate, percent and measurement problems; simple geometry problems; distribution of a quantity into its fractional parts; recognition of decimals; percent equivalencies; and estimating.
Performance Indicators Assessed in Unit	1B – Apply properties within the real number system. 1C – Reason quantitatively and use units to solve problems. 2B – Write expressions in equivalent forms to solve problems. 2G – Create equations that describe numbers or relationships. 2H – Understand solving equations as a process of reasoning and explain the reasoning. 2I – Solve equations and inequalities in one variable.

Unit 3	**Data Fluency, Probability, and Statistics**
Summary	Operations with permutations and combinations, factorials, and probability word problems. Statistical analysis of graphs and experiments.
Performance Indicators Assessed in Unit	5A – Summarize, represent, and interpret data on a single count or measurement variable. 5B – Summarize, represent, and interpret data on 2 categorical and quantitative variables. 5C – Interpret linear models. 5D – Understand and evaluate random processes underlying statistical experiments. 5E – Make inferences and justify conclusions from sample surveys, experiments, and observational studies. 5F – Understand independent and conditional probability and use them to interpret data.
Unit 4	**Algebraic Operations**
Summary	Operations evaluating simple formulas and expressions, adding and subtracting monomials and polynomials, multiplying and dividing monomials and polynomials, factoring and expanding polynomials, solving linear and quadratic equations and inequalities, systems of equations, manipulating roots and exponents.
Performance Indicators Assessed in Unit	1A – Extend properties of exponents to rational exponents. 1B – Apply properties within the real number system. 1D – Perform arithmetic operations with complex numbers. 2C – Perform arithmetic operations on polynomials. 2D – Understand the relationship between zeros and factors of polynomials. 2J – Solve systems of equations algebraically. 2K – Represent and solve equations and inequalities in two variables graphically.
Unit 5	**Geometry & Trigonometry**
Summary	Solve problems with trigonometric functions, plane geometry. Overview of circle properties and equations. Evaluation of area and volume problems.
Performance Indicators Assessed in Unit	4A – Experiment with transformations in the plane. 4B – Understand congruence in terms of rigid motions. 4G – Define trigonometric ratios and solve problems involving right triangles. 4H – Understand and apply theorems about circles. 4L – Explain volume formulas and use them to solve problems.
Unit 6	**Consumer Mathematics**
Summary	Explore various mathematics that occurs in the marketplace.
Performance Indicators Assessed in Unit	1C – Reason quantitatively and use units to solve problems. 1F – Compute within the real number system. 2B – Write expressions in equivalent forms to solve problems. 2H – Understand solving equations as a process of reasoning and explain the reasoning. 3F – Construct and compare linear, quadratic, and exponential models and solve problems. 4B – Understand congruence in terms of rigid motions. 5C – Interpret linear models

Unit 7	**Independent Essays**
Summary	Independently research and writing on various mathematicians and the impacts they have had on humanity.
Performance Indicators Assessed in Unit	4A – Know geometry terms and definitions. 5C – Choose and critique data collection techniques. 5F – Summarize, represent, and interpret data.

Summative Assessments Retake

- Students have the opportunity to retake summative assessments.
- The student must submit a retake form to the teacher within five (5) school days of the date that the summative assessment score is reported to the student.
- The highest score a student can receive on a retake or late assessment is a 75.
- The score achieved on a retake will replace the current score (even if the score is lower).
- If a student is making up a test from an absence, that assessment will be graded up to 100.

Grading of Formative Assessments

- Formative assessments will count as 20% of the grade.
- Formative assessments may be scored on either a 0-100 scale or a 0-4 scale.
- The 0-4 scale will be represented in Power School as 4=100, 3=87, 2=77, and 1=67.
- The method of scoring of formative assessments will be determined by assignment.