

Algebra III

Algebra III will be a course that covers advanced algebraic concepts including factoring of polynomials, solving polynomial equations, inverse functions, exponential and logarithmic functions, quadratic relations, and series and combinations.

The prerequisite will be Advanced Algebra and teacher recommendation. The course is designed for students who are not ready for FST, or for seniors who have completed FST but who are not ready for PDM.

12.1 NUMERATION/NUMBER SENSE

12.1.2 By the end of twelfth grade, students will express the equivalent forms of numbers using exponents, radicals, scientific notation, absolute values, fractions, decimals, and percents.

ALG2 /FST/ ALG3 1.2d Apply the rules of rational exponents.

FST/ ALG3 1.2e Convert between exponential form and logarithmic form.

ALG2/ ALG3 1.2f Simplify radicals.

12.2 COMPUTATION/ESTIMATION

12.2.1 By the end of twelfth grade, students will solve theoretical and applied problems using numbers in equivalent forms, radicals, exponents, scientific notation, absolute values, fractions, decimals, and percents, ratios and proportions, order of operations, and properties of real numbers.

ALG2/FST/PDM/ ALG3 2.1c Solve problems using numbers in equivalent forms, radicals, exponents, absolute values, fractions, decimals, percents, ratios and proportions, order of operations, and properties of real numbers.

12.6 ALGEBRAIC CONCEPTS

12.6.1 By the end of twelfth grade, students will graph and interpret algebraic relations and inequalities.

ALG2/ ALG3 6.1h Create and apply inverses of relations and their properties.

12.6.2 By the end of twelfth grade, students will solve problems involving equations and inequalities.

FST/PDM/ ALG3 6.2d Solve polynomials by graphing, factoring, and/or the quadratic formula.

12.6.4 By the end of twelfth grade, students will solve problems using patterns and functions.

ALG2/FST/PDM/ ALG3 6.4c Find the n th term of an arithmetic or geometric sequence.

ALG2/FST/PDM/ ALG3 6.4d Create recursive and explicit formulas for arithmetic and geometric sequences.

FST/PDM/ ALG3 6.4e Evaluate arithmetic and geometric series.

ALG2/FST/ ALG3 6.4g Recognize the properties of families of functions.

FST/PDM/ ALG3 6.4h Recognize patterns of exponential growth and decay and their significance to real-life situations.

FST/PDM/ ALG3 6.4i Solve problems involving exponential growth and decay.

ALG2/FST/ ALG3 6.4j Solve problems using power functions and step functions.

FST/PDM/ ALG3 6.4k Solve problems using logarithmic functions.

FST/PDM/ ALG3 6.4l Expand polynomials using patterns in Pascal's Triangle.

Local Curriculum above the standards:

FST/PDM/ ALG3 7g Apply the Fundamental Theorem of Algebra to determine the number of zeroes for any polynomial.

FST/PDM/ ALG3 7h Determine the types of zeroes (real and/or complex) for any given polynomial.

FST/ ALG3 7i Factor polynomials using advanced techniques (sums/differences of squares, cubes, odd powers, and grouping).

FST/ ALG3 7j Given zeroes of a function, determine factors, solutions, roots, x- intercepts, and degree of the polynomial.

FST/ ALG3 7l Find inverses of functions and matrices.

FST/PDM/ ALG3 7n Find the composite(s) of functions.

ALG2/FST/PDM/ ALG3 7z Identify domain and range of a function.

ALG/ ALG3 7dd Multiply and simplify polynomials.

ALG/ ALG3 7ee Find common monomial factors of polynomials

ALG3 7jj Write equations for ellipses, parabolas, circles and hyperbolas.