



Capital School District Math Curriculum – Honors Algebra 2

Honors Algebra 2 is designed to help students understand Algebra as a study of the system of real and complex numbers. Successful completion of Algebra 2 is a state requirement for graduation. Topics will include functions, their graphs and solving equations and inequalities. Functions to be studied include absolute value, cubic, polynomial, rational, radical, exponential, logarithmic and trigonometric. Where possible, connections to real life applications will be used to extend the Algebra and how it applies to probability and statistics.

Marking Period 1

- Introduction of functions including notation, transformations and parent functions, domain, range, inverses and composition.
- Solve and graph absolute value equations and inequalities
- Solve quadratics using various methods – square roots, complete the square, quadratic formula – including complex solutions
- Circles and parabolas and their characteristics
- Solving quadratic and linear systems

Marking Period 2

- Graphing cubic and polynomial functions
- Add, subtract, multiply, divide and factor polynomials
- Binomial Theorem and Rational root theorem
- Solve polynomial and rational equations
- Add, subtract, multiply and divide rational expressions.

Marking Period 3

- Graphing quadratic, cubic and radical functions
- Convert from radical to exponential form and vice-versa
- Arithmetic and geometric sequences and geometric series.
- Model exponential functions – growth and decay
- Simplify logarithmic and natural logarithmic expressions using their properties.
- Solve exponential and logarithmic equations.
- Fitting data
- Unit circle to find sine, cosine and tangent

Marking Period 4

- Graphing sine, cosine and tangent function with transformation.
- Fitting data to a sine function
- Data gathering and distributions including the normal distribution
- Confidence intervals
- Surveys