

Course Code	1200340
Course Category	6-12
Subject Area	Mathematics
Course Type	Core
Course Title	Algebra 2 Honors
Course Level	3
Course Length	Full Year
Credit Description	1
Abbreviated Title	Algebra 2 Honors

RELATED BENCHMARKS (49) :

Scheme	Descriptor
LA.910.1.6.1	The student will use new vocabulary that is introduced and taught directly;
LA.910.4.2.1	The student will write in a variety of informational/expository forms, including a variety of technical documents (e.g., how-to-manuals, procedures, assembly directions);
MA.912.A.1.6	Identify the real and imaginary parts of complex numbers and perform basic operations.
MA.912.A.2.5	Graph absolute value equations and inequalities in two variables.
MA.912.A.2.6	Identify and graph common functions (including but not limited to linear, rational, quadratic, cubic, radical, absolute value).
MA.912.A.2.7	Perform operations (addition, subtraction, division and multiplication) of functions algebraically, numerically, and graphically.
MA.912.A.2.8	Determine the composition of functions.
MA.912.A.2.9	Recognize, interpret, and graph functions defined piece-wise, with and without technology.
MA.912.A.2.10	Describe and graph transformations of functions
MA.912.A.2.11	Solve problems involving functions and their inverses.
MA.912.A.2.12	Solve problems using direct, inverse, and joint variations.
MA.912.A.3.14	Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods.
MA.912.A.3.15	Solve real-world problems involving systems of linear equations and inequalities in two and three variables.
MA.912.A.4.3	Factor polynomial expressions.
MA.912.A.4.4	Divide polynomials by monomials and polynomials with various techniques, including synthetic division.

- MA.912.A.4.5 Graph polynomial functions with and without technology and describe end behavior.
- MA.912.A.4.6 Use theorems of polynomial behavior (including but not limited to the Fundamental Theorem of Algebra, Remainder Theorem, the Rational Root Theorem, Descartes' Rule of Signs, and the Conjugate Root Theorem) to find the zeros of a polynomial function.
- MA.912.A.4.7 Write a polynomial equation for a given set of real and/or complex roots.
- MA.912.A.4.8 Describe the relationships among the solutions of an equation, the zeros of a function, the x-intercepts of a graph, and the factors of a polynomial expression, with and without technology.
- MA.912.A.4.9 Use graphing technology to find approximate solutions for polynomial equations.
- MA.912.A.4.10 Use polynomial equations to solve real-world problems.
- MA.912.A.4.11 Solve a polynomial inequality by examining the graph with and without the use of technology.
- MA.912.A.4.12 Apply the Binomial Theorem.
- MA.912.A.5.6 Identify removable and non-removable discontinuities, and vertical, horizontal, and oblique asymptotes of a graph of a rational function, find the zeros, and graph the function.
- MA.912.A.6.2 Add, subtract, multiply and divide radical expressions (square roots and higher).
- MA.912.A.6.3 Simplify expressions using properties of rational exponents.
- MA.912.A.6.4 Convert between rational exponent and radical forms of expressions.
- MA.912.A.6.5 Solve equations that contain radical expressions.
- MA.912.A.7.3 Solve quadratic equations over the real numbers by completing the square.
- MA.912.A.7.4 Use the discriminant to determine the nature of the roots of a quadratic equation.
- MA.912.A.7.5 Solve quadratic equations over the complex number system.
- MA.912.A.7.6 Identify the axis of symmetry, vertex, domain, range and intercept(s) for a given parabola.
- MA.912.A.7.7 Solve non-linear systems of equations with and without using technology.
- MA.912.A.7.10 Use graphing technology to find approximate solutions of quadratic equations.
- MA.912.A.8.1 Define exponential and logarithmic functions and determine their relationship
- MA.912.A.8.2 Define and use the properties of logarithms to simplify logarithmic expressions and to find their approximate values.
- MA.912.A.8.3 Graph exponential and logarithmic functions.

- MA.912.A.8.5 Solve logarithmic and exponential equations.
- MA.912.A.8.6 Use the change of base formula.
- MA.912.A.8.7 Solve applications of exponential growth and decay.
- MA.912.A.9.1 Write the equations of conic sections in standard form and general form, in order to identify the conic section and to find its geometric properties (foci, asymptotes, eccentricity, etc.).
- MA.912.A.9.2 Graph conic sections with and without using graphing technology.
- MA.912.A.10.3 Decide whether a given statement is always, sometimes, or never true (statements involving linear or quadratic expressions, equations, or inequalities rational or radical expressions or logarithmic or exponential functions).
- MA.912.D.11.1 Define arithmetic and geometric sequences and series.
- MA.912.D.11.2 Use sigma notation to describe series.
- MA.912.D.11.3 Find specified terms of arithmetic and geometric sequences.
- MA.912.D.11.4 Find partial sums of arithmetic and geometric series, and find sums of infinite convergent geometric series. Use Sigma notation where applicable.
- MA.912.G.6.6 Given the center and the radius, find the equation of a circle in the coordinate plane or given the equation of a circle in center-radius form, state the center and the radius of the circle.
- MA.912.G.6.7 Given the equation of a circle in center-radius form or given the center and the radius of a circle, sketch the graph of the circle.