



Revised: 06/17/2024  
Board Approved: July 2016

# JC Schools Algebra II Yearly Math Standards

| Units                                                                                                         | Priority Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Supporting Standards                                                                                                                                                                                                                                                                                                                                                                                        |
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| <b>Unit 1</b><br>Basic Functions<br><br><b>Year-Long</b><br>20 days<br><br><b>Blocked (spring)</b><br>10 days | <p><b>A2.IF.A.1</b><br/>Identify and interpret key characteristics of functions represented graphically, with tables and with algebraic symbolism to solve problems.</p> <p><b>A2.BF.A.3</b><br/>Describe the effects of transformations algebraically and graphically, creating vertical and horizontal translations, vertical and horizontal reflections and dilations (expansions/compressions) for linear, quadratic, cubic, square and cube root, absolute value, exponential and logarithmic functions.</p> <p><b>A2.FM.A1</b><br/>Create functions and use them to solve applications of quadratic and exponential function model problems.</p> | <p><b>A2.REI.A.2</b><br/>Solve rational equations where numerators and denominators are polynomials and where extraneous solutions may result.</p> <p><b>A2.APR.A.5</b><br/>Identify zeros of polynomials when suitable factorizations are available, and use the zeros to sketch the function defined by the polynomial.</p> <p><b>A2. IF.A.2</b><br/>Translate between equivalent forms of functions.</p> |
| <b>Unit 2</b><br>Rational Expressions and Equations<br><br><b>Year-Long</b><br>20 days                        | <p><b>A2.REI.A.1</b><br/>Create and solve equations and inequalities, including those that involve absolute value.</p> <p><b>A2.IF.A.1</b><br/>Identify and interpret key characteristics of functions represented graphically, with tables and with algebraic symbolism to solve problems.</p>                                                                                                                                                                                                                                                                                                                                                        | <p><b>A2.APR.A.3</b><br/>Find the least common multiple of two or more polynomials.</p> <p><b>A2.NQ.A.4</b><br/>Solve equations involving rational exponents and/or radicals and identify situations where extraneous solutions may result.</p> <p><b>A2.APR.A.5</b></p>                                                                                                                                    |

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| <p><b>Blocked (spring)</b><br/>11 days</p>                                                                                                         | <p><b>A2.BF.A.3</b><br/>Describe the effects of transformations algebraically and graphically, creating vertical and horizontal translations, vertical and horizontal reflections and dilations (expansions/compressions) for linear, quadratic, cubic, square and cube root, absolute value, exponential and logarithmic functions.</p> | <p>Identify zeros of polynomials when suitable factorizations are available, and use the zeros to sketch the function defined by the polynomial.</p> <p><b>A2.REI.A.2</b><br/>Solve rational equations where numerators and denominators are polynomials and where extraneous solutions may result.</p> <p><b>A2.APR.A.1</b><br/>Extend the knowledge of factoring to include factors with complex coefficients.</p> <p><b>A2.APR.A.4</b><br/>Add, subtract, multiply, and divide rational expressions.</p>                                                                                                                   |
| <p><b>Unit 3</b><br/>Polynomials, Radicals, and Complex Numbers</p> <p><b>Year-Long</b><br/>20 days</p> <p><b>Blocked (spring)</b><br/>11 days</p> | <p><b>A2.NQ.B.7</b><br/>Know and apply the Fundamental Theorem of Algebra.</p> <p><b>A2.APR.A.2</b><br/>Understand the Remainder Theorem and use it to solve problems.</p>                                                                                                                                                               | <p><b>A2.NQ.A.3</b><br/>Add, Subtract, multiply and divide radical expressions.</p> <p><b>A2.NQ.B.5</b><br/>Represent complex numbers.</p> <p><b>A2.NQ.B.6</b><br/>Add, subtract, multiply and divide complex numbers.</p> <p><b>A2.APR.A.1</b><br/>Extend the knowledge of factoring to include factors with complex coefficients.</p> <p><b>A2.APR.A.4</b><br/>Add, subtract, multiply and divide rational numbers.</p> <p><b>A2.APR.A.5</b><br/>Identify zeros of polynomials when suitable factorizations are available, and use the zeros to sketch the function defined by the polynomial.</p> <p><b>A2.APR.A.3</b></p> |

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|                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>Find the least common multiple of two or more polynomials.</p> <p><b>A2.NQ.A.4</b><br/>Solve equations involving rational exponents and/or radicals and identify situations where extraneous solutions may result.</p>                                                                                                                                                                                                                                                                                                                         |
| <p><b>Unit 4</b><br/>Solving and Creating Functions</p> <p><b>Year-Long</b><br/>18 days</p> <p><b>Blocked (spring)</b><br/>12 days</p> | <p><b>A2.REI.A.1</b><br/>Create and solve equations and inequalities, including those that involve absolute value.</p> <p><b>A2.FM.A.1</b><br/>Create functions and use them to solve applications of quadratic and exponential function modeling problems.</p> <p><b>A2.BF.A.3</b><br/>Describe the effects of transformations algebraically and graphically, creating vertical and horizontal translations, vertical and horizontal reflections and dilations(expansions/compressions) for linear, quadratic, cubic, square and cube root, absolute value, exponential and logarithmic functions.</p> <p><b>A2.IF.A.1</b><br/>Identify and interpret key characteristics of functions represented graphically, with tables and with algebraic symbolism to solve problems.</p> | <p><b>A2.NQ.A.4</b><br/>Solve equations involving rational exponents and/or radicals and identify situations where extraneous solutions may result.</p> <p><b>A2.NQ.A.2</b><br/>Create and recognize equivalent expressions involving radical and exponential forms of expressions.</p> <p><b>A2.REI.A.2</b><br/>Solve rational equations where numerators and denominators are polynomials and where extraneous solutions may result.</p> <p><b>A2.NQ.A.1</b><br/>Extend the system of powers and roots to include rational exponents.<br/>.</p> |
| <p><b>Unit 5</b><br/>Function Operations, Inverses, and Compositions</p> <p><b>Year-Long</b><br/>25 days</p>                           | <p><b>A2.BF.A.1</b><br/>Create new functions by applying the four arithmetic operations and compositions of functions (modifying the domain and range as necessary).</p> <p><b>A2.IF.A.1</b><br/>Identify and interpret key characteristics of functions represented graphically, with tables</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p><b>A2.BF.A.2</b><br/>Derive inverses of functions, and compose the inverse with the original function to show that the functions are inverses.</p> <p><b>A2.REI.A.2</b><br/>Solve rational equations where numerators and denominators are polynomials and where extraneous solutions may result.</p>                                                                                                                                                                                                                                          |

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| <p><b>Blocked (spring)</b><br/>7 days</p>                                                                                                       | <p>and with algebraic symbolism to solve problems<br/>No priority standard alignment.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p><b>A2.APR.A.5</b><br/>Identify zeros of polynomials when suitable factorizations are available, and use the zeros to sketch the function defined by the polynomial.</p> <p><b>A2.IF.A.2</b><br/>Translate between equivalent forms of functions.</p>                                                                                                                                                                                                                                                                                        |
| <p><b>Unit 6</b><br/>Systems,<br/>Piecewise, and<br/>Matrices</p> <p><b>Year-Long</b><br/>20 days</p> <p><b>Blocked (spring)</b><br/>9 days</p> | <p><b>A2.REI.A.1</b><br/>Create and solve equations and inequalities, including those that involve absolute value.</p> <p><b>A2.REI.B.3</b><br/>Create and solve systems of equations that may include nonlinear equations and inequalities.</p> <p><b>A2.IF.A.1</b><br/>Identify and interpret key characteristics of functions represented graphically, with tables and with algebraic symbolism to solve problems.</p> <p><b>A2.BF.A.3</b><br/>Describe the effects of transformations algebraically and graphically, creating vertical and horizontal translations, vertical and horizontal reflections and dilations for linear, quadratic, cubic, square and cube root, absolute value, exponential and logarithmic functions.</p> | <p><b>N 505.</b><br/>Add and subtract matrices that have integer entries</p> <p><b>N 607.</b><br/>Use relations involving addition, subtraction, and scalar multiplication of vectors and of matrices</p> <p><b>N 706.</b><br/>Apply properties of matrices and properties of matrices as a number system</p> <p><b>A2.NQ.A.2</b><br/>Create and recognize equivalent expressions involving radical and exponential forms of expressions.</p> <p><b>A2.NQ.A.1</b><br/>Extend the system of powers and roots to include rational exponents.</p> |
| <p><b>Unit 7</b><br/>Exponential<br/>Functions</p> <p><b>Year-Long</b><br/>20 days</p> <p><b>Blocked (spring)</b><br/>9 days</p>                | <p><b>A2.REI.A.1</b><br/>Create and solve equations and inequalities, including those that involve absolute value</p> <p><b>A2.IF.A.1</b><br/>Identify and interpret key characteristics of functions represented graphically, with tables and with algebraic symbolism to solve problems</p> <p><b>A2.FM.A.1</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                    | <p><b>A2.NQ.A.2</b><br/>Create and recognize equivalent expressions involving radical and exponential forms of expressions.</p> <p><b>A2.REI.A.2</b><br/>Solve rational equations where numerators and denominators are polynomials and where extraneous solutions may result.</p> <p><b>A2.NQ.A.1</b></p>                                                                                                                                                                                                                                     |

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|                                                                                                                              | <p>Create functions and use them to solve applications of quadratic and exponential function modeling problems.</p> <p><b>A2.BF.A.3</b><br/>Describe the effects of transformations algebraically and graphically, creating vertical and horizontal translations, vertical and horizontal reflections and dilations(expansions/compressions) for linear, quadratic, cubic, square and cube root, absolute value, exponential and logarithmic functions.</p>                                                                                                                                                                                               | <p>Extend the system of powers and roots to include rational exponents.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <p><b>Unit 8</b><br/>Logarithmic Functions</p> <p><b>Year-Long</b><br/>11 days</p> <p><b>Blocked (spring)</b><br/>9 days</p> | <p><b>A2.SSE.A.4</b><br/>Understand why logarithmic scales are used, and use them to solve problems.</p> <p><b>A2.BF.A.3</b><br/>Describe the effects of transformations algebraically and graphically, creating vertical and horizontal translations, vertical and horizontal reflections and dilations(expansions/compressions) for linear, quadratic, cubic, square and cube root, absolute value, exponential and logarithmic functions.</p> <p><b>A2.IF.A.1</b><br/>Identify and interpret key characteristics of functions represented graphically, with tables and with algebraic symbolism to solve problems. No priority standard alignment.</p> | <p><b>A2.SSE.A.1</b><br/>Develop the definition of logarithms based on properties of exponents.</p> <p><b>A2.SSE.A.2</b><br/>Use the inverse relationship between exponents and logarithms to solve exponential and logarithmic equations.</p> <p><b>A2.SSE.A.3</b><br/>Use properties of logarithms to solve equations or find equivalent expressions.</p> <p><b>A2.BF.A.2</b><br/>Derive inverses of functions, and compose the inverse with the original function to show that the functions are inverses.</p> |
| <p><b>Unit 9</b><br/>Data and Statistical Analysis</p> <p><b>Year-Long</b><br/>12 days</p>                                   | <p><b>A2.DS.A.2</b><br/>Determine whether a specified model is consistent with a given data set.</p> <p><b>A2.DS.A.4</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p><b>A2.DS.A.1</b><br/>Analyze how random sampling could be used to make inferences about population parameters.</p> <p><b>A2.DS.A.3</b></p>                                                                                                                                                                                                                                                                                                                                                                     |

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| <p><b>Blocked (spring)</b><br/>9 days</p> | <p>Use data from a sample to estimate characteristics of the population and recognize the meaning of the margin of error in these estimates.</p> <p><b>A2.DS.B.8</b><br/>Know and use the characteristics of normally distributed data sets; predict what percentage of the data will be above or below a given value that is a multiple of standard deviations above or below the mean.</p> | <p>Describe and explain the purposes, relationship to randomization and differences, among sample surveys, experiments and observational studies.</p> <p><b>A2.DS.A.6</b><br/>Analyze decisions and strategies using probability concepts.</p> <p><b>A2.DS.A.5</b><br/>Describe and explain how the relative sizes of a sample and the population affect the margin of error of predictions.</p> <p><b>A2.DS.A.7</b><br/>Evaluate reports based on data.</p> <p><b>A2.DS.B.9</b><br/>Fit a data set to a distribution using its mean and standard deviation to determine whether the data is approximately normally distributed.</p> |
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