

# Mathematics: Algebra II

## The Real Number System N-RN

**2 Rewrite expressions that include rational exponents.** LC.A2: N-RN.A.2

## Seeing Structure in Expressions A-SSE

**3 Represent quantities and expressions that use exponents.** LC.A2: A-SSE.B.3

**4 Use the formula to solve real world problems such as calculating the height of a tree after  $n$  years given the initial height of the tree and the rate the tree grows each year.** LC.A2: A-SSE.B.4

## Arithmetic with Polynomials and Rational Expressions A-APR

**2 Understand and apply the Remainder Theorem.** LC.A2: A-APR.A.2

**3 Find the zeros of a polynomial when the polynomial is factored.** LC.A2: A-APR.B.3

**4a Prove polynomial identities by showing steps and providing reasons.** LC.A2: A-APR.C.4A

**4b Illustrate how polynomial identities are used to determine numerical relationships. For example the polynomial identity  $(a + b)^2 = a^2 + 2ab + b^2$  can be used to rewrite  $(25)^2 = (20 + 5)^2 = 20^2 + 2(20 \cdot 5) + 5^2$ .** LC.A2: A-APR.C.4B

**6 Rewrite rational expressions,  $a(x)/b(x)$ , in the form  $q(x) + r(x)/b(x)$  by using factoring, long division, or synthetic division.** LC.A2: A-APR.D.6

## Creating Equations A-CED

**1 Translate a real-world problem into a one variable linear equation.** LC.A2: A-CED.A.1

## Reasoning with Equations and Inequalities A-REI

**4 Solve quadratic equations in one variable by simple inspection, taking the square root, factoring, and completing the square.** LC.A2: A-REI.B.4

**6a Solve systems of equations using the elimination method (sometimes called linear combinations).** LC.A2: A-REI.C.6A

**6b Solve a system of equations by substitution (solving for one variable in the first equation and substitution it into the second equation).** LC.A2: A-REI.C.6B

**6c Solve systems of equations using graphs.** LC.A2: A-REI.C.6C

**7 Solve a system containing a linear equation and a quadratic equation in two variables graphically and symbolically.** LC.A2: A-REI.C.7

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**11** Explain why the intersection of  $y = f(x)$  and  $y = g(x)$  is the solution of the equation  $f(x) = g(x)$  for any combination of linear or exponential. Find the solution(s) by: Using technology to graph the equations and determine their point of intersection, Using tables of values, or Using successive approximations that become closer and closer to the actual value. LC.A2: A-REI.D.11

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**Interpreting Categorical  
and Quantitative  
Data** S-ID

**4** Use descriptive stats; range, median, mode, mean, outliers/gaps to describe the data set. LC.A2: S-ID.A.4

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**6a** Represent data on a scatter plot to describe and predict. LC.A2: S-ID.B.6A

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**6b** Select an appropriate statement that describes the relationship between variables. LC.A2: S-ID.B.6B

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**Interpreting Categorical  
and Quantitative  
Data** S-IC

**1** Determine what inferences can be made from statistics. LC.A2: S-IC.A.1

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**6a** Make or select an appropriate statement(s) about findings. LC.A2: S-IC.B.6A

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**6b** Apply the results of the data to a real world situation. LC.A2: S-IC.B.6B