

Algebra 2

Reporting Standard Expressions

A.APR.A.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication: add, subtract, and multiply polynomials.

A.APR.B.2 Know and apply the Remainder Theorem: For Polynomial $p(x)$ and a number a , the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$.

A.APR.D.6 Rewrite simple rational expressions in different forms.

A.APR.D.7 Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply and divide rational expressions.

A.SSE.A.2 Use the structure of an expression to identify ways to rewrite it.

A.SSE.B.3.a Factor a quadratic expression to reveal the zeros of the function it defines.

F.LE.A.4 For exponential models, express as a logarithm and evaluate the logarithm.

N.CN.A.1 Know there is a complex number i such that i squared equals -1 , and every complex number has the form $a + bi$ with a and b real.

N.CN.A.2 Use the relation of i squared = -1 and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.

N.RN.A.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents.

Reporting Standard Equations and Inequalities

A.CED.A.2 Create equations in two or more variables to represent relationships between quantities.

A.CED.A.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.

A.CED.A.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.

A.REI.A.2 Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.

A.REI.B.4.b Solve quadratic equations by inspection, taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a + bi$ for real numbers a and b .

N.CN.C.7 Solve quadratic equations with real coefficients that have complex solutions.

Reporting Standard Graphing

A.APR.B.3 Identify zeros of polynomials when suitable factorizations are available and use the zeros to construct a rough graph of the function defined by the polynomial.

A.REI.D.11 Explain why the x -coordinates of the points where the graphs of the equations intersect are the solutions of the equation.

F.IF.C.7.a Graph linear and quadratic functions and show intercepts, maxima, and minima.

F.IF.C.7.b Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.

F.IF.C.7.c Graph polynomial functions, identify zeros when suitable factorizations are available, and show end behavior.

F.IF.C.7.d Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.

F.IF.C.7.e Graph exponential functions, showing intercepts and end behavior.

Reporting Standard Interpreting Functions

F.IF.A.2 Use function notation, evaluate functions for input in their domains, and interpret statements that use function notation in terms of a context.

F.IF.B.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.

F.IF.B.5 Relate the domain of a function to its graph and where applicable, to the quantitative relationship it describes.

F.IF.C.9 Compare properties of two functions each represented in a different way.

F.LE.A.2 Construct linear and exponential functions, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

Reporting Standard Building Functions

F.BF.A.1.a Determine an explicit expression, a recursive process, or steps for calculation from a context.

F.BF.A.1.b Combine standard function types using arithmetic operations.

F.BF.B.3 Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $kf(x)$, $f(kx)$, and $f(x+k)$ for specific values of k (both positive and negative); find the value of k given the graphs.

F.BF.B.4 Find inverse functions.

F.BF.B.5 Understand the inverse relationship between exponents and logarithms and use the relationship to solve problems involving logarithms and exponents.

F.IF.C.8 Write function defined by an expression in different but equivalent forms to reveal and explain different properties of functions.

Reporting Standard Trigonometric

F.TF.A.1 Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.

F.TF.A.2 Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.

F.TF.A.3 Use special triangles to determine geometrically the values of sine, cosine, tangent, for certain angle measures and use the unit circle to express the values of sine, cosine, and tangent in terms of their values for s , where x is any real number.

F.TF.A.4 Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.
