

Lake Washington School District
Teaching and Learning Framework

Advanced Algebra

Mathematics

Advanced Algebra

Power Standards | 2009 - 2010

A2.1 Core Content: Solving problems

PS1 Students are able to select and justify a correct mathematical model (linear function, systems of linear equations, quadratic function, or exponential function) for a problem situation and use that model to solve the problem. A2.1.A, A2.1.B, A2.1.C, A2.1.D

A2.2 Core Content: Numbers, expressions, and operations

PS2 Students are able to add, subtract, multiply, divide, simplify and evaluate rational algebraic expressions. A2.2.B, A2.2.C

A2.3 Core Content: Quadratic functions and equations

PS3 Students are able to use algebra and the completing the square procedure to fluently translate between the standard, vertex, and factor forms of a quadratic function. A2.3.A

PS4 Students are able to solve quadratic equations with real or complex roots by factoring, completing the square, or the quadratic formula. They are also able to use the graph and discriminant to classify the nature of the roots (rational, irrational, and complex) A2.3.B, A2.3.C

A2.4 Core Content: Exponential and logarithmic functions

PS5 Students demonstrate an understanding of inverse relationships by being able to sketch graphs of exponential functions and their inverse logarithmic graphs and by finding logarithm values through examining the inverse exponential graph. A2.4.B

PS6 Students are able to use the inverse relationship between exponential and logarithmic functions and the properties of exponents and logarithms to solve exponential and logarithmic equations. A2.4.A, A2.4.C

A2.5 Core Content: Additional functions and equations

PS7 Students are able to describe the effect of different transformations and different size parameters [$f(x - h)$, $f(x) + k$, $cf(x)$] on the graphs of previously learned functions. A2.5.A

PS8 Students are able to sketch graphs and solve square root, inverse variation, and cubic functions; connecting the solutions of the equation to the graphs of the functions. A2.5.B, A2.5.C, A2.5.D

A2.6 Core Content: Probability, data, and distributions

PS9 Students are able to determine the probability or conditional probability of both independent and dependent compound events. A2.6.A, A2.6.B

PS10 Students will be able to determine whether a two-variable data set is best modeled with a quadratic or exponential function and use technology to find a model and make predictions. A2.6.E

A2.8 Core Processes: Reasoning, problem solving, and communication

PS11 Students are able to demonstrate the ability to problem solve by representing problem situations mathematically; selecting and applying appropriate solution strategies, and verifying their solutions for accuracy. Students are able to communicate their solutions in context, using appropriate mathematical representations, symbols, and language. A2.8.A, A2.8.B, A2.8.C, A2.8.F