Whiteriver Unified School District Essential Standards
Quarterly Focus

What is it we expect students to learn?

Grade: 11th	Subject: Algebra 2

First Quarter

A2.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. Include problem-solving opportunities utilizing a real-world context. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. Functions include linear, quadratic, exponential, polynomial, logarithmic, rational, sine, cosine, tangent, square root, cube root and piecewise-defined functions.

A2.F-IF.C.7- Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Functions include linear, quadratic, exponential, polynomial, logarithmic, rational, sine, cosine, tangent, square root, cube root and piecewise-defined functions.

Second Quarter

A2.A-CED.A.1- Create equations and inequalities in one variable and use them to solve problems. Include problem-solving opportunities utilizing real-world context. Focus on equations and inequalities arising from linear, quadratic, rational, and exponential functions.

A2.A-REI.D.11- Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) =g(x); find the solutions approximately (e.g., using technology to graph the functions, make tables of values, or find successive approximations). Include problems in real-world context. Extend from linear, quadratic, and exponential functions to cases where f(x) and/or g(x) are polynomial, rational, exponential, and logarithmic functions.

A2.A-REI.B.4- Fluently solve quadratic equations in one variable. Solve quadratic equations by inspection (e.g., for x2 = 49), taking square roots, completing the square, the quadratic formula and factoring, as appropriate

A2.A-CED.A.1- Create equations and inequalities in one variable and use them to solve problems. Include problem-solving opportunities utilizing real-world context. Focus on equations and inequalities arising from linear, quadratic, rational, and exponential functions.

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.

A2.A-REI.C.7- Solve a system consisting of a linear equation and a quadratic equation in two variables algebraically and

Third Quarter

A2.A-SSE.B.3- Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. Include problem-solving opportunities utilizing real-world context and focus on expressions with rational exponents.   c. Use the properties of exponents to transform expressions for exponential functions.

A2.A-SSE.B.4- Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. For example, calculate mortgage payments.

A2.F-IF.C.7- Graph functions expressed symbolically and show key features of the

Fourth Quarter

A2.A-APR.B.2- Know and apply the Remainder and Factor Theorem: For a 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).

A2.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. Focus on quadratic, cubic, and quartic polynomials including polynomials for which factors are not provided

A2.F-BF.A.2- Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.

graph, by hand in simple cases and using technology for more complicated cases. Functions include linear, quadratic, exponential, polynomial, logarithmic, rational, sine, cosine, tangent, square root, cube root and piecewise-defined functions.

A2.A-APR.C.4- Prove polynomial identities and use them to describe numerical relationships.

A2.A-APR.D.6- Rewrite rational expressions in different forms; write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x), using inspection, long division, or for the more complicated examples, a computer algebra system.

A2.A-SSE.A.2- Use structure to identify ways to rewrite polynomial and rational expressions. Focus on polynomial operations and factoring patterns.

A2.A-REI.A.2- Solve rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.

- *Endurance- Knowledge and skills of value beyond a single date*

- *Leverage- Knowledge and skills valuable in multiple disciplines*

- *Readiness for the next level of learning- Knowledge and skills that are necessary for success in the next grade level or the next level of instruction*