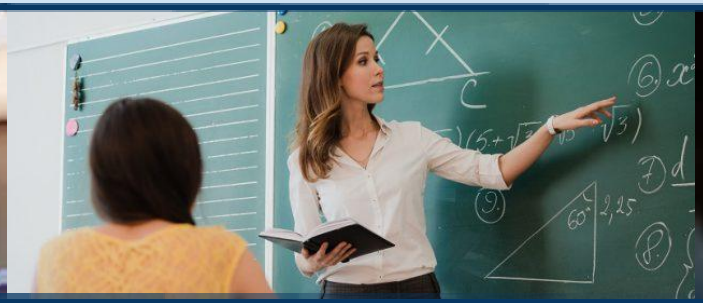
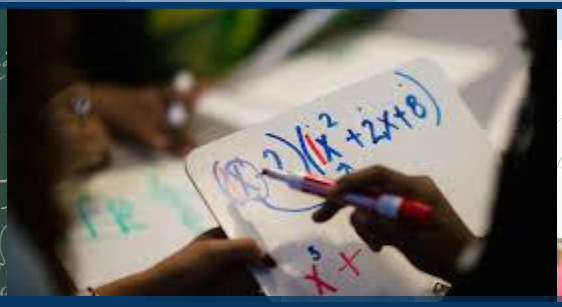
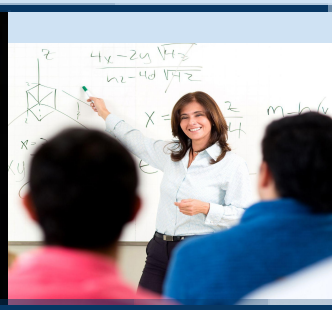
# Catoosa County Public Schools

## Teaching and Learning Standards

*Every Child, Every Day, Without Exception*

Algebra II

## District Essential Standards and Learning Targets

**3.1 Find the inverse of exponential and logarithmic functions using equations, tables, and graphs, limiting the domain of inverses where necessary to maintain functionality, and prove by composition or verify by inspection that one function is the inverse of another.**

- I can verify inverse relationships using tables and graphs and find inverse functions algebraically.
- I can prove that logarithms and exponential functions are inverses of each other by composition.

**3.2 Analyze, graph, and compare exponential and logarithmic functions.**

- I can graph and identify key features of exponential functions.
- I can graph and identify key features of logarithmic functions.
- I can calculate the rate of change of an interval from a graph and table.

**3.6 Create, interpret, and solve exponential equations to represent relationships between quantities and analyze the relationships numerically with tables, algebraically, and graphically.**

- I can write and solve real-world problems using exponential functions.
- I can solve exponential functions in context using logarithms.
- I can use graphs and equations to evaluate functions.

# Catoosa County Public Schools

## Teaching and Learning Standards

*Every Child, Every Day, Without Exception*

Algebra II

**4.1 Rewrite radical expressions as expressions with rational exponents. Extend the properties of integer exponents to rational exponents.**

- I can convert between radical expressions and expressions with rational exponents to solve equations.
- I can rewrite expressions involving radicals and rational exponents using the properties of exponents.

**5.2 Define complex numbers i such that $i^2 = -1$ and show that every complex number has the form a + bi where a and b are real numbers and that the complex conjugate is a - bi.**

- I can understand and identify complex numbers and their parts.
- I can find the conjugate of a complex number.

**5.3 Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.**

- I can solve real life problems that require the application of addition, subtraction, or multiplication of complex numbers.
- I can rationalize a complex denominator. *(Honors only)

**5.5 Write and solve quadratic equations and inequalities with real coefficients and use the solution to explain a contextual situation.**

- I can solve quadratic equations by assessing, taking square roots, factoring, and applying the quadratic formula as appropriate.
- I can explore a variety of real life problems modeled by the quadratic.

**5.9 Identify zeros of polynomial functions using technology or pre-factored polynomials and use the zeros to construct a graph of the function defined by the polynomial function. Analyze identify key features of these polynomial functions.**

- I can graph and analyze key features of polynomial functions using technology where appropriate.
- I can create a sketch of a graph by hand and graph using technology.

# Catoosa County Public Schools

## Teaching and Learning Standards

*Every Child, Every Day, Without Exception*

Algebra II

**5.10 Use the structure of an expression to factor polynomials, including the sum of cubes, the difference of cubes, and higher- order polynomials that may be expressed as a quadratic within a quadratic.**

- I can factor higher-order polynomials.
- I can factor sum and difference of cubes (Honors only)

**8.1 Rewrite simple rational expressions in equivalent forms.**

- I can simplify rational expressions with real life examples.

**8.2 Add, subtract, multiply and divide rational expressions, including problems in context and express rational expressions in irreducible form.**

- I can apply the correct operation on rational expressions when given real life problems.
- I can recognize the simplest form.

**6.1 Use matrices to represent data, and perform mathematical operations with matrices and scalars, demonstrating that some properties of real numbers hold for matrices, but that others do not.**

- I can perform operations with matrices.
- I can invert a 2x2 matrix by hand.
- I can explain that multiplying by the inverse of a matrix replaces "division."

**6.3 Use the inverse of an invertible matrix to solve systems of linear equations.**

- I can express a system of linear equations as a matrix equation.
- I can solve a 2x2 system by hand.
- I can solve larger systems using techonology.

Algebra II

**2.3 Distinguish between population distributions, sample data distributions, and sampling distributions. Use sample statistics to make inferences about population parameters based on a random sample from that population and to communicate conclusions using appropriate statistical language.**

- I can identify different types of population distributions.
- I can understand the effect of sample size of a distribution of sample means.

**2.5 Given a normally distributed population, estimate percentages using the Empirical Rule, z-scores, and technology.**

- I can explain standard deviation.
- I can interpret standard deviation.
- I can find data percentages using technology, Empirical Rule and z-scores.