

**CUMBERLAND COUNTY SCHOOL DISTRICT
BENCHMARK ASSESSMENT CURRICULUM PACING GUIDE**

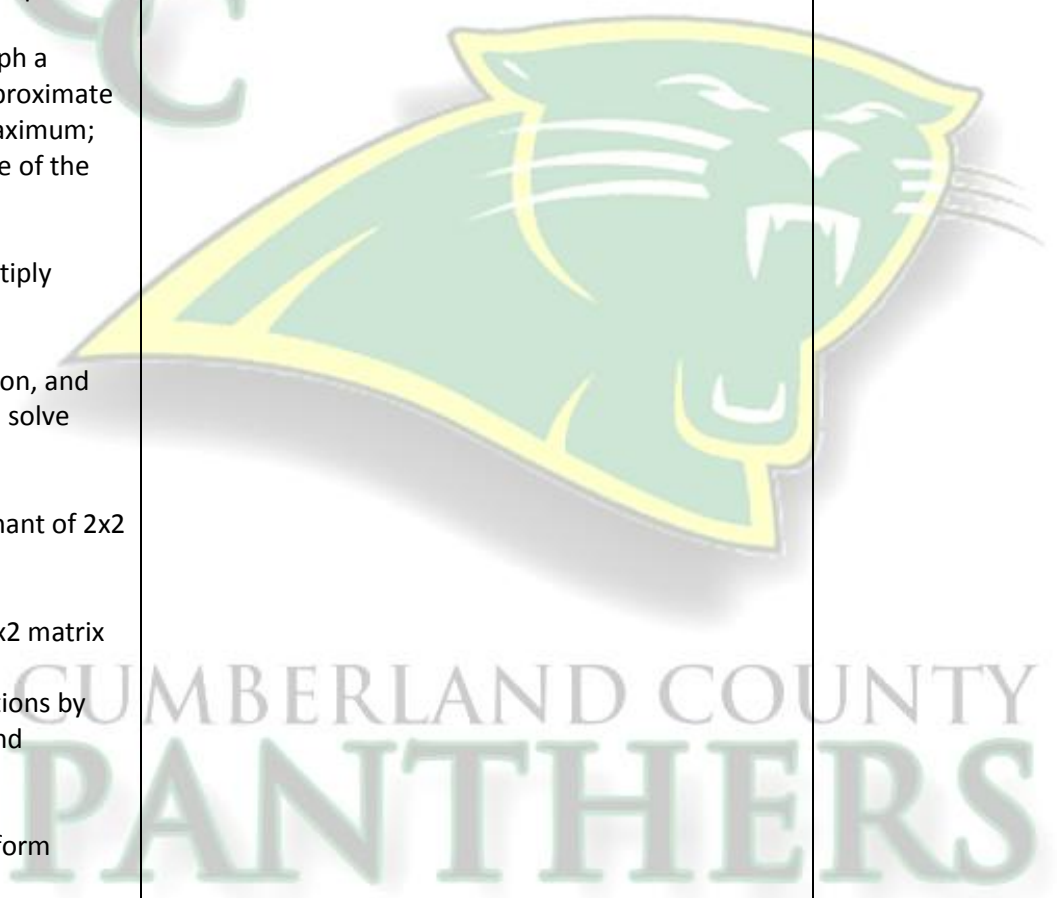
School: CCHS	Subject: Algebra II	Grade: 10 th Grade
Benchmark Assessment 1		
Instructional Timeline: 1 st Nine Weeks		
Topic(s): Expressions, Equations, Functions in First Degree; Complex Numbers; Quadratic Equations and Functions		
Quality Core Standards	Learning Targets (I Can Statements)	Key Vocabulary
<p>D.1.a. Solve linear inequalities containing absolute value.</p> <p>D.1.b. Solve compound inequalities containing “and” and “or” and graph the solution set.</p> <p>D.1.c. Solve algebraically a system containing three variables.</p> <p>D.2.a. Graph a system of linear inequalities in two variables with and without technology to find the solution set to the system</p> <p>C.1.a. Identify complex numbers and write their conjugates</p> <p>C.1.b. Add, subtract, multiply complex numbers</p> <p>C.1.c. Simplify quotients of complex numbers</p> <p>C.1.d. Perform operations on functions, including function composition, and determine domain</p>	<ol style="list-style-type: none"> 1. I can solve linear inequalities containing absolute value. 2. I can solve compound inequalities and absolute value inequalities and graph the solution set. 3. I can algebraically solve a system of three variables. 4. I can graph a system of linear inequalities to find the solution set of the system. 5. I can identify complex numbers. 6. I can perform operations with complex numbers. 7. I can simplify quotients of complex numbers. 8. I can write the conjugate of complex numbers. 9. I can perform the composition of functions. 10. I can determine the domain and range of functions. 11. I can solve quadratic equations and inequalities using various methods. 12. I can use the discriminant to determine the number and type of roots for the equation. 	<p>Inequalities</p> <p>Absolute value</p> <p>Compound inequalities</p> <p>Solution set</p> <p>System of equations</p> <p>Linear inequalities</p> <p>Complex numbers</p> <p>Conjugates</p> <p>Composition of functions</p> <p>Domain</p> <p>Range</p> <p>Quadratic equations</p> <p>Vertex</p> <p>Maximum</p> <p>Minimum</p> <p>Discriminant</p> <p>Roots</p> <p>Zeros</p> <p>x-intercepts</p> <p>solutions</p> <p>quadratic systems</p>

<p>and range for each of the given functions</p> <p>E.1.a. Solve quadratic equations and inequalities using various techniques, including completing the square and using the quadratic formula</p> <p>E.1.b. Use the discriminant to determine the number and type of roots for a given quadratic equation</p> <p>E.1.c. Solve quadratic equations with complex number solutions</p> <p>E.1.d. Solve quadratic systems graphically and algebraically with and without technology</p>	<p>13. I can solve quadratic equations with complex number solutions.</p> <p>14. I can solve quadratic systems graphically.</p>	
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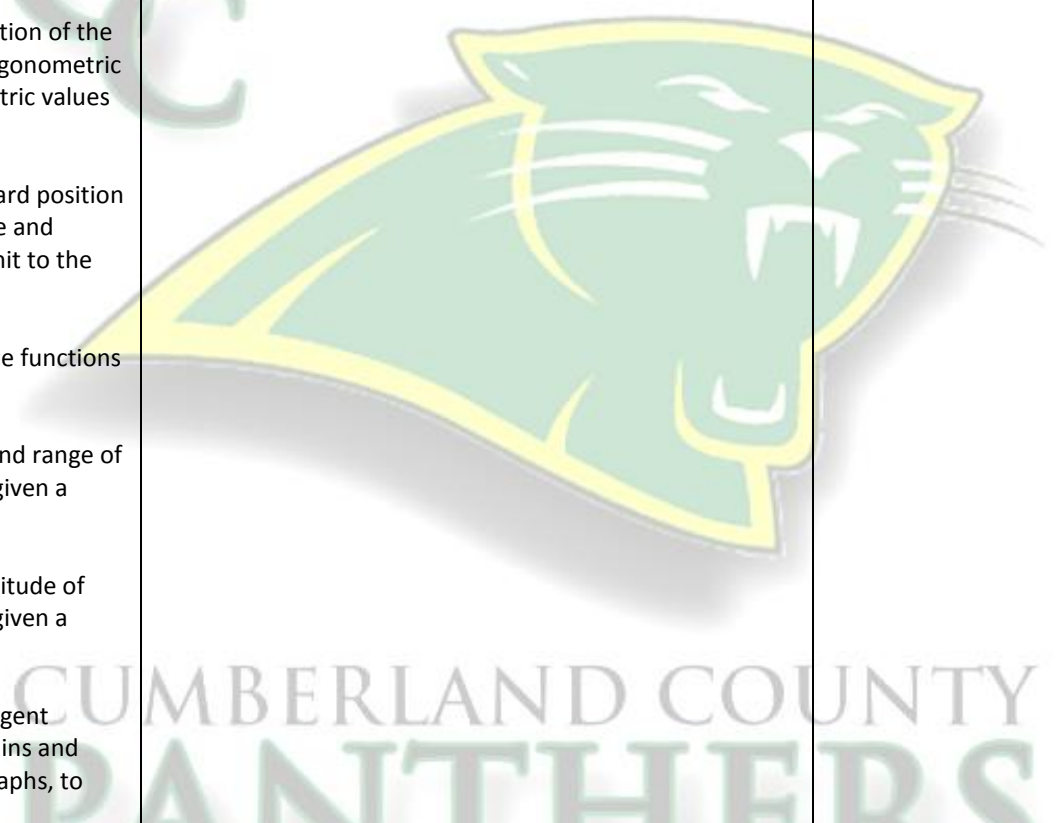
**CUMBERLAND COUNTY SCHOOL DISTRICT
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School: CCHS	Subject: Algebra II	Grade: 10 th Grade
Benchmark Assessment 2		
Instructional Timeline: 2 nd Nine Weeks		
Topic(s): Quadratic Equations and Functions; Polynomial Expressions, Equations, and Functions; Exploring Polynomial Expressions, Equations		
Quality Core Standards	Learning Targets (I Can Statements)	Key Vocabulary
E.2.a Determine the domain and range of a quadratic function; graph the function with and without technology	1. I can determine the domain and range of a quadratic function	Domain
E.2.b Use transformations (e.g., translation, reflection) to draw the graph of a relation and determine a relation that fits a graph	2. I can use transformations to graph a quadratic function.	Range
E.2.c Graph a system of quadratic inequalities with and without technology to find the solution set to the system	3. I can graph a system of quadratic inequalities.	Quadratic Function
F.1.a Evaluate and simplify polynomial expressions and equations	4. I can graph a quadratic equation algebraically.	Vertex
F.1.b Factor polynomials using a variety of methods (e.g., factor theorem, synthetic division, long division, sums and differences of cubes, grouping)	5. I can evaluate polynomial expressions and equations.	Axis of Symmetry
F.2.a Determine the number and type of rational zeros for a polynomial function	6. I can simplify polynomial expressions.	Roots
	7. I can factor polynomials using long division.	Zeros
	8. I can factor polynomials using sums and differences of cubes.	x-intercepts
	9. I can factor polynomials using other methods.	solutions
	10. I can determine the number and type of zeros of a polynomial function.	System of quadratics
	11. I can find all rational zeros of a polynomial function.	Polynomials – monomial, binomial, trinomial
	12. I can make connections with the solutions of a polynomial equation.	Long division
	13. I can graph a polynomial function.	Synthetic division
	14. I can determine the domain and range of a polynomial function.	Transformations
	15. I can add, subtract, and multiply matrices.	Rational Numbers
	16. I can use operations of matrices to solve real-world problems.	Irrational Numbers
	17. I can calculate the determinant of a matrix	Real Numbers
		Imaginary Numbers
		Matrix
		Rows
		Columns
		Determinant
		Inverse

<p>F.2.b Find all rational zeros of a polynomial function</p> <p>F.2.c Recognize the connection among zeros of a polynomial function, x-intercepts, factors of polynomials, and solutions of polynomial equations</p> <p>F.2.d Use technology to graph a polynomial function and approximate the zeros, minimum, and maximum; determine domain and range of the polynomial function</p> <p>I.1.a Add, subtract, and multiply matrices</p> <p>I.1.b Use addition, subtraction, and multiplication of matrices to solve real-world problems</p> <p>I.1.c Calculate the determinant of 2x2 and 3x3 matrices</p> <p>I.1.d Find the inverse of a 2x2 matrix</p> <p>I.1.e Solve systems of equations by using inverses of matrices and determinants</p> <p>I.1.f Use technology to perform operations on matrices, find determinants, and find inverses.</p>	<p>18. I can find the inverse of a matrix.</p> <p>19. I can solve a system of equations using the inverse and the determinant of a matrix.</p> <p>20. I can use technology to perform operations with matrices.</p>	
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School: CCHS	Subject: Algebra II	Grade: 10 th Grade
Benchmark Assessment 3		
Instructional Timeline: 3 rd Nine Weeks		
Topic(s): Advanced Functions, Exponential and Logarithmic Functions, Trigonometric Functions		
Quality Core Standards	Learning Targets (I Can Statements)	Key Vocabulary
G.1.a Solve mathematical and real-world rational equation problems (e.g., work or rate problems)	1. I can solve real-world rational equation problems.	Rational Equations
G.1.b Simplify radicals that have various indices	2. I can simplify radicals.	Radicals
G.1.c Use properties of roots and rational exponents to evaluate and simplify expressions	3. I can use the properties of rational exponents.	Rational Exponents
G.1.d Add, subtract, multiply, and divide expressions containing radicals	4. I can add, subtract, multiply, and divide expressions containing radicals.	Rationalize denominators
G.1.e Rationalize denominators containing radicals and find the simplest common denominator	5. I can rationalize denominators containing radicals.	Nth roots
G.1.f Evaluate expressions and solve equations containing nth roots or rational exponents	6. I can evaluate expressions and solve equations containing nth roots or rational exponents.	Exponential
G.1.g Evaluate and solve radical equations given a formula for real-world situation	7. I can evaluate and solve radical equations in real-world settings.	Logarithmic
G.2.a Graph exponential and logarithmic functions with and without technology.	8. I can graph exponential functions by hand and with technology.	Base
G.2.b Convert exponential equations to	9. I can graph logarithmic functions by hand and with technology.	Law of Sines
	10. I can convert equations between logarithmic and exponential form and solve exponential/logarithmic equations.	Law of Cosines
	11. I can use the law of sines and the law of cosines to solve problems.	Unit Circle
	12. I can use the unit circle.	Degree
	13. I can convert between radian and degree measure.	Radian
	14. I can graph the sine and cosine functions by hand and with technology.	Period
	15. I can find the domain and range of the graphs of	Amplitude

<p>logarithmic form and logarithmic equations to exponential form.</p> <p>G.3.a Use the law of cosines and the law of sines to find lengths of sides and measures of angles of triangles in mathematical and real-world problems.</p> <p>G.3.b Use the unit-circle definition of the trigonometric functions and trigonometric relationships to find trigonometric values for general angles.</p> <p>G.3.c Measure angles in standard position using degree or radian measure and convert a measure from one unit to the other.</p> <p>G.3.d Graph the sine and cosine functions with and without technology.</p> <p>G.3.e Determine the domain and range of the sine and cosine functions, given a graph.</p> <p>G.3.f Find the period and amplitude of the sine and cosine functions, given a graph.</p> <p>G.3.g Use sine, cosine, and tangent functions, including their domains and ranges, periodic nature, and graphs, to interpret and analyze relations</p>	<p>sine and cosine functions.</p> <p>16. I can use the sine, cosine, and tangent functions to interpret and analyze relations.</p>	 <p>CUMBERLAND COUNTY PANTHERS</p>
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**CUMBERLAND COUNTY SCHOOL DISTRICT
BENCHMARK ASSESSMENT CURRICULUM PACING GUIDE**

School: CCHS	Subject: Algebra II	Grade: 10 th Grade
Benchmark Assessment 4		
Instructional Timeline: 4 th Nine Weeks		
Topic(s): Data Relations, Probability, and Statistics; Sequences and Series; Conics		
Quality Core Standards	Learning Targets (I Can Statements)	Key Vocabulary
<p>H.1.a Use the fundamental counting principle to count the number of ways an event can happen.</p> <p>H.1.b Use counting techniques, like combinations and permutations, to solve problems (e.g., to calculate probabilities).</p> <p>H.1.c Find the probability of mutually exclusive and non-mutually exclusive events.</p> <p>H.1.d Use unions, intersections, and complements to find probabilities.</p> <p>H.1.e Solve problems involving conditional probability.</p> <p>H.2.a Find the nth term of an arithmetic or geometric sequence.</p> <p>H.2.b Find the position of a given term of an arithmetic or geometric sequence.</p> <p>H.2.c Find sums of a finite arithmetic</p>	<ol style="list-style-type: none"> I can use the fundamental counting principle to solve problems. I can perform combinations and permutations to solve problems. I can find the probability of mutually exclusive and non-mutually exclusive events. I can find probabilities using unions, intersections, and complements. I can solve problems involving conditional probability. I can find the formula for the nth term of arithmetic and geometric sequences and use them to find the nth term. I can find the position of a given term of an arithmetic or geometric sequence. I can find the sum of a finite geometric or arithmetic series. I can use sequences and series to solve real-world problems. I can express sums using sigma notation. I can identify conic sections in standard form. I can graph circles and parabolas from equations or given characteristics. I can determine characteristics of circles and parabolas from equations and graphs. I can identify and write equations for circles and parabolas from characteristics and graphs. 	<p>Fundamental Counting Principal</p> <p>Combinations</p> <p>Permutations</p> <p>Mutually Exclusive</p> <p>Non-mutually exclusive</p> <p>Union</p> <p>Intersection</p> <p>Complements</p> <p>Conditional Probability</p> <p>Arithmetic Sequence</p> <p>Geometric Sequence</p> <p>Sum</p> <p>Finite</p> <p>Geometric Series</p> <p>Arithmetic Series</p> <p>Sigma Notation</p> <p>Conics</p> <p>Circle</p> <p>Parabola</p> <p>Center</p> <p>Midpoint</p> <p>Distance</p> <p>Radius</p> <p>Diameter</p> <p>Focus</p> <p>Parabola</p>

<p>or geometric series.</p> <p>H.2.d Use sequences and series to solve real-world problems.</p> <p>H.2.e Use sigma notation to express sums.</p> <p>E.3.a Identify conic sections (e.g., parabola, circle, ellipse, hyperbola) from their equations in standard form</p> <p>E.3.b Graph circles and parabolas and their translations from given equations or characteristics with and without technology</p> <p>E.3.c Determine characteristics of circles and parabolas from their equations and graphs</p> <p>E.3.d Identify and write equations for circles and parabolas from given characteristics and graphs</p>		<p>Directrix Ellipse Hyperbola</p>
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