	<ul> <li>Mathematics can be used to model real-life situations.</li> </ul>
Essential	<ul> <li>Trigonometric identities help lay the foundation for upper level</li> </ul>
Understandings	mathematics
onderstandings	<ul> <li>Trigonometric identities must be used to solve certain types of</li> </ul>
	- Ingonometric identities must be used to solve certain types of
	equations.
E	• what is an identity?
Essential	• where are identities used?
Questions	<ul> <li>How can certain types of trig problems be solved without a</li> </ul>
	calculator, but with trig identities?
	<ul> <li>Memorize, write and use the various trig identities.</li> </ul>
	<ul> <li>Write and use the various trig identities.</li> </ul>
Essential	<ul> <li>Determine which applications area associated with the various</li> </ul>
Knowledge	types of trig identities.
	<ul> <li>Trigonometric identities can be used to solve certain types of trig</li> </ul>
	equations.
	Terms:
Vocabulary	<ul> <li>trigonometric identities, identity proof, identity verification,</li> </ul>
	double-angle identities, Pythagorean identities, reciprocal
	identities, quotient identities, half-angle identities
	<ul> <li>Apply appropriate identities to a certain situation and or equation.</li> </ul>
Essential	<ul> <li>Use fundamental trig identities to verify other trig identities.</li> </ul>
Skills	<ul> <li>Use trig formulas to rewrite trig functions in a more convenient</li> </ul>
	form.
	Mathematics
	A. Number
	Real Number
	A1. Students will know how to represent and use real numbers.
	a. Use the concept of nth root.
	b. Estimate the value(s) of roots and use technology to
	approximate them.
	c. Compute using laws of exponents
	d. Multiply and divide numbers expressed in scientific notation.
Related	e Understand that some quadratic equations do not have real
Maine Learning	solutions and that there exist other number systems to allow
Results	for solutions to these equations
Roound	B Data
	Measurement and Approximation
	B1 Students understand the relationship between precision and
	accuracy
	a Express answers to a reasonable degree of precision in the
	context of a given problem
	h Represent an approximate measurement using appropriate
	numbers of significant figures
	c Know that most massurements are approximations and

explain why it is useful to take the mean of repeated
measurements.

	C. Geometry
	Geometric Figures
	C1.Students justify statements about polygons and solve problems.
	a. Use the properties of triangles to prove theorems about
	figures and relationships among figures.
	b. Solve for missing dimensions based on congruence and
	similarity.
	c. Use the Pythagorean Theorem in situations where right
	triangles are created by adding segments to figures.
	d. Use the distance formula.
	C2.Students justify statements about circles and solve problems.
	a. Use the concepts of central and inscribed angles to solve
	problems and justify statements.
	b. Use relationships among arc length and circumference, and
	areas of circles and sectors to solve problems and justify
	statements.
Related	C3.Students understand and use basic ideas of trigonometry.
Maine Learning	a. Identify and find the value of trigonometric ratios for angles
Results	in right triangles.
	<ul> <li>b. Use trigonometry to solve for missing lengths in right</li> </ul>
	triangles.
	c. Use inverse trigonometric functions to find missing angles in
	right triangles.
	Geometric Measurement
	C4. Students find the surface area and volume of three-dimensional
	objects.
	a. Find the volume and surface area of three-dimensional
	figures including cones and spheres.
	b. Determine the effect of changes in linear dimensions on the
	Volume and surface areas of similar and other three-
	dimensional figures.
	D. Algebra
	Symbols and Expressions D1 Students understand and use polynomials and expressions with
	rotional expressions with
	a Simplify expressions including these with rational numbers
	a. Simplify expressions including mose with rational numbers.
	b. Add, subtract, and multiply polynomials.
	d Divido polynomials by (ay b)
	a. Divide polynomials by $(ax+b)$ .

Related Maine Learning Results	<ul> <li>Equations and Inequalities</li> <li>D2.Students solve families of equations and inequalities.</li> <li>a. Solve systems of linear equations and inequalities in two unknowns and interpret their graphs.</li> <li>b. Solve quadratic equations graphically, by factoring in cases where factoring is efficient, and by applying the quadratic formula.</li> <li>c. Solve simple rational equations and inequalities and interpret the results.</li> <li>e. Apply the understanding that the solution(s) to equations of the form f(x) = g(x) are x-value(s) of the point(s) of intersection of the graphs of f(x) and g(x) and common outputs in table of values.</li> <li>f. Explain why the coordinates of the point of intersection of the lines represented by a system of equations is its solution and apply this understanding to solving problems.</li> <li>D3.Students understand and apply ideas of logarithms.</li> <li>a. Use and interpret logarithmic scales.</li> <li>b. Solve equations in the form of x + b<sup>Y</sup> using the equivalent form y = log<sub>b</sub>x.</li> <li>Functions and Relations</li> <li>D4.Students understand and interpret the characteristics of functions using graphs, tables, and algebraic techniques.</li> <li>a. Recognize the graphs and sketch graphs of the basic functions.</li> <li>b. Apply functions from these families to problem situations.</li> <li>c. Use concepts such as domain, range, zeros, intercepts, and maximum and minimum values.</li> <li>d. Use the concepts of average rate of change (table of values) and increasing and decreasing over intervals, and use these characteristics to compare functions.</li> <li>D5.Students express relationships recursively and use iterative methods to solve problems.</li> <li>a. Express the (n+1)st term in terms of the nth term and describe relationships in terms of starting point and rule followed to transform one terms to the next.</li> <li>b. Use technology to perform repeated calculations to develop solutions to real life problems involving linear, exponential, and other patterns of chan</li></ul>
LC220112	Students make up their own trig identities and shellongs each other
And	<ul> <li>Students make up their own trig identities and challenge each other</li> </ul>
Activities	to verify and then prove them.

Sample	Homework
Classroom	<ul> <li>Quizzes</li> </ul>
Assessment	<ul> <li>Chapter tests</li> </ul>
Methods	
	Publications:
Sample	<ul> <li>Precalculus with Limits – A Graphing Approach</li> </ul>
Resources	Other Resources:
	<ul> <li>Graphing calculator</li> </ul>
	<ul> <li>A+ learning system for remediation</li> </ul>