**Grade Level**: 11-12 Grade

**Subject :** Precalculus **Team Members:** T. Knowles, T. Clement, J. Kurz, C.George

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| 1. Standard/ Description
 | 1. Evidence of Proficiency
 | 1. Prior Skills Needed
 | 1. Common Summative Assessment`
 | 1. When Taught?
 |
| Simplify and perform operations with exponents, radicals and rational functions | Simplify:1. $\sqrt[3]{81}$
2. $\sqrt[5]{64x^{12}y^{6}}$
3. $y^{\frac{3}{5}}\sqrt{y}$
4. $\frac{5x^{-4}y^{2}}{5^{-2}x^{2}y^{8}}$
5.
6. Solve:
 | 1. Exponent rules
2. Perform operations on fractions
3. Prime factoring to break down radicals
 | Chapter 1 TestChapter 3 testSemester 1 final exam | August-October |
| Solve and graph linear, absolute value and radical functions | Solve:1.
2.
3.
4.
5.
6.
 | 1. Understand the x- and y- axis system and be able to plot points.
2. Calculate the slope of a line.
3. Graph a line using the slope-intercept method.
4. Absolute value as the distance from zero.
5. Understand that inequalities have a range of answers.
 | Chapter 1 testChapters 2 testSemester 1 final exam | SeptemberOctober |
| Solve and graph quadratic functions- using multiple methods | 1. Graph the quadratic function $y=\left(x-2\right)^{2}+4$
2. Solve $0=x^{2}-x-6$ by ALL of the following methods: complete the square, factoring, and quadratic formula.

Identify the zeros, max and mins of a quadratic function. | 1. Shape of a quadratic function
2. Basic factoring skills.
3. Understand the x- and y- axis system and be able to plot points
 | Chapter 2 testChapter 3 testChapter 4 testSemester 1 Final exam | OctoberNovember |
| Solve polynomial, exponential and logarithmic functions and identify properties (zeros, asymptotes, extrema) of each. | **Use the function** 1. Complete the square and find the vertex form of the function (2pts)
2. Graph the function, labeling all important points. (4pts)
3. Identify: (9pts)
	1. Vertex
	2. Is the vertex a max or a min?
	3. Axis of Symmetry domain
	4. Range
	5. Intervals where the function is increasing
	6. Intervals where the function is decreasing
	7. X-intercept & Y-intercepts
4. List the translations that were performed on the function g(x)=x2 to achieve the graph of f(x) (2pts)
5. Identify all asymptotes and holes in $y=\frac{x^{2}-x-6}{x^{2}+x-12}$
 | N/A | Chapter 2 testChapter 3 testChapter 4 testSemester 1 Final Exam | October-December |
| Evaluate trig function values of any angle in both degrees and radians. | 1. Convert any angle between radians and degrees
2. Evaluate:

$$\sin(45°)+\cos(\frac{π}{2})-csc^{2}\left(60°\right)$$ | 1. Basic understanding of degree angle measure
2. 30-60-90 reference triangle
3. 45-45-90 reference triangle
 | Chapter 5 TestCum Test ch5-7Semester 2 Final exam | January |
| Solve trigonometric equations | Find the value of each of the other five trigonometric functions for an angle, Ø given the information indicated.$$tan∅= \frac{-4}{3} and sin∅<0$$Solve trig equations* 1. $sinx=\frac{\sqrt{3}}{2}$
	2. $sin^{2}x-2sinx=0$
	3. $sin\frac{∅}{2}-2=1$
	4. $2sin^{2}x+5\cos(x)+1=0 , 0\leq x<2π$
 | * Basic understanding of degree angle measure
* 30-60-90 reference triangle
* 45-45-90 reference triangle
 | Chapter 6 testChapter 7 testCum Test ch5-7Semester 2 Final Exam | January-February |
| Apply trig functions to model real world problems | 1. Find the radian measure of a central angle opposite an arc of 10 cm long on a circle of radius 3.5cm
2. Linear and angular velocity
3. Apply a trig function regression given data that follows a cyclic pattern
4. What are the amplitude and period of the function?

$y=5sin⁡\frac{π}{4}(x-8)$  | N/A | Chapter 6 testChapter 7 testCum Test ch5-7Semester 2 Final Exam | February  |
| Solve systems of equations graphically and by substitution, elimination, matrices/determinants. | Solve each of the following systems using ALL of the following methods:* 1. Substitution
	2. Elimination
	3. Gauss-Jordan Elimination
	4. Cramer’s Rule
	5. Inverse Matrices

Ex:$$2x+5y= -34$$$$-3x+2y=-44$$Ex:$$3x+4y+2z=3$$$$5x-2y-13z=3$$$$4x+3y-3z=6$$ | 1. Understand the x- and y- axis system and be able to plot points.
2. Be able to calculate a Least Common Multiple.
3. Distributive Property.
4. Replace a variable with an algebraic expression.
 | Chapter 2 testChapter 8 TestChapter 9 testSemester 2 final Exam | September MarchApril |