

# Catoosa County Public Schools

## Teaching and Learning Standards

*Every Child, Every Day, Without Exception*



### Precalculus

## District Essential Standards and Learning Targets

### 5.1 Identify and graph different conic sections given the equations in standard form.

- I can identify and graph circles, parabolas, ellipses, and hyperbolas given the equation in standard form.

### 5.3 Define polar coordinates and relate polar coordinates to Cartesian coordinates.

- I can define polar coordinates and relate polar coordinates to Cartesian coordinates.

### 4.1 Apply the fundamental trigonometric identities to simplify expressions and verify other identities.

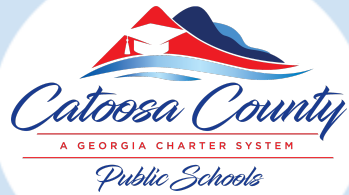
- I can apply trigonometric identities to simplify expressions.

### 4.3 Solve trigonometric equations arising in modeling contexts.

- I can solve trigonometric equations.

### 4.4 Prove and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles.

- I can apply the Law of Sines and Law of Cosines to find measurements.



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### **6.1 Represent vector quantities as directed line segments; represent magnitude and direction of vectors in component form using appropriate mathematical notation.**

- I can represent vector quantities as directed line segments; represent magnitude and direction of vector component form using appropriate mathematical notation.

### **6.2 Add and subtract vectors and multiply vectors by a scalar to find the resultant vector.**

- I can add and subtract vectors and multiply vectors by a scalar to find the resultant vector.

### **2.1 Graph piecewise-defined functions, including step functions and absolute value functions.**

- I can graph piecewise functions and list key characteristics.

### **2.3 Represent the limit of a function using both the informal definition and the graphical interpretation in the context of piecewise-defined functions; interpret limits expressed in analytic notation.**

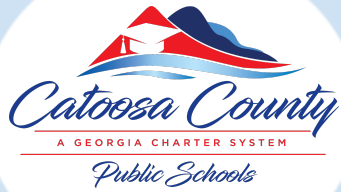
- I can find and interpret limits (analytically, graphically, and with a table).

### **2.6 Represent the behavior of a rational function using limit notation for vertical and horizontal asymptotes and end behavior.**

- I can represent limits of rational functions analytically and graphically (including vertical asymptotes, horizontal asymptotes, end behavior, & removable discontinuities).

### **2.7 Represent the limit of a function using both the informal definition and the graphical interpretation in the context of rational functions; interpret limits expressed in analytic notation.**

- I can represent limits of rational functions analytically and graphically (including vertical asymptotes, horizontal asymptotes, end behavior, & removable discontinuities).



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### Precalculus

**3.1 Use the concept of a radian as the ratio of the arc length to the radius of a circle to establish the existence of  $2\pi$  radians in one revolution.**

- I can convert and degrees.

**3.2 Utilize right triangles on the unit circle to determine the values of the six trigonometric ratios for  $\pi/6$ ,  $\pi/4$ , and  $\pi/3$ . Use reflections of the triangles as reference angles to establish known values in all four quadrants of the coordinate plane.**

- I can determine the values of the six trig ratios on the unit circle (counterclockwise and clockwise).

**3.3 Define the six trigonometric ratios in terms of  $x$ ,  $y$ , and  $r$  using the unit circle centered at the origin of the coordinate plane. Interpret radian measures of angles as a rotation both counterclockwise and clockwise around the unit circle.**

- I can determine the values of the six trig ratios on the unit circle (counterclockwise and clockwise).

**3.4 Derive the fundamental trigonometric identities.**

- I can determine the values of trigonometric functions for a set of given conditions and use fundamental trigonometric identities as necessary.

**3.5 Determine the value(s) of trigonometric functions for a set of given conditions.**

- I can determine the values of trigonometric functions for a set of given conditions and use fundamental trigonometric identities as necessary.

**3.6 Graph and write equations of trigonometric functions using period, phase shift, and amplitude in modeling contexts.**

- I can graph and write equations of trigonometric functions using period, phase shift, and amplitude.

**3.8 Restrict the domain of a trigonometric function to create an invertible function and graph the inverse function. Evaluate inverse trigonometric expressions.**

- I can graph and evaluate inverse trigonometric functions.