

Course Power Standards (Enduring Understandings)

Department: **Mathematics**

Course: **Precalculus**

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Students will understand that...

- 1) Functions have distinct characteristics and are used to model authentic situations.
- 2) Zeros of a function, x -intercepts on a graph, solutions to an equation, and factors of an algebraic expression are all related to each other.
- 3) Working with rational expressions is the same as working with fractions, and the graphs of rational functions can have asymptotes.
- 4) Exponential and logarithmic functions are inverses of each other and we use this property to solve equations involving these functions.
- 5) Ratios of side lengths in right triangles allow us to determine unknown side lengths and/or unknown measures of angles.
- 6) Trigonometric functions are periodic which means their graphs repeat at regular intervals.
- 7) Trigonometric identities help simplify trigonometric expressions and solve trigonometric equations.
- 8) Matrices are a new tool to find common solutions to systems of equations and to represent data.
- 9) Equations of conics allow us to describe important situations that may not be represented by functions.
- 10) Parametric equations can be used to model motion in terms of time and polar equations are a method of representing functions in terms of an angle and distance from a pole.
- 11) Pascal's triangle, the binomial theorem, the normal curve, regression lines, and sampling are all methods to predict the outcomes of events. Variance and means are methods of interpreting the spread of these outcomes.
- 12) A sequence is a list and sometimes we can predict the terms in that list. A series is the sum of terms in a sequence.