

PARENT MASTERY GUIDE

PRECALCULUS

FIRST TERM

~ **Model real-world situations**

- Using techniques of data analysis
- Recognize and apply mathematical models of various types
- Determine if certain models are appropriate
- Use the various models to draw conclusions and make predictions

~**Understanding Functions**

- Sketch graphs of basic functions
- Graph transformations of functions
- Analyze functions
- Solve inequalities using technology
- Introduce and apply limits

~**Exponential and Logarithmic Functions**

- Work with exponential and logarithmic functions
- Model real-world situations involving exponential growth and decay

~**Conic Sections**

- Use equations and graphs of conic sections to solve real-world problems

~ **Trigonometric Functions**

- Define and graph the six trigonometric functions
- Use trigonometric functions to solve real- world problems
- Verify and develop trigonometric functions using graphs
- Use technology to solve trigonometric equations and inequalities
- Find the values of inverse trigonometric functions

~**Applications of Trigonometry**

- Derive the Law of Sines and Law of Cosines and use in problems involving triangles and vectors
- Derive and apply the formulas for the area of a triangle and sector of a circle
- Understand and apply radians and degree measures
- Use vectors to solve real-world problems
- Work with complex numbers
- Prove and apply DeMoivre's Theorem

~**Sequences and Series**

- Demonstrate an understanding of sequences and series
- Determine whether a series converges or diverges
- Find the sum of an infinite series that converges
- Find the sum of a geometric series