Precalculus Pre-AP

Spring 2016

Instructor: R. Maldonado
Conference Period: 8:07 – 9:37
Room #: 233
Phone: (956) 271–1600 ext. 4199
Email: rmaldonado@sharylandisd.org

COURSE OBJECTIVE

In Precalculus, students continue to build on the K-8, Algebra I, Algebra II, and Geometry foundations as they expand their understanding through other mathematical experiences. Students use symbolic reasoning and analytical methods to represent mathematical situations, to express generalizations, and to study mathematical concepts and the relationships among them. Students use functions, equations, and limits as useful tools for expressing generalizations and as means for analyzing and understanding a broad variety of mathematical relationships. Students also use functions as well as symbolic reasoning to represent and connect ideas in geometry, probability, statistics, trigonometry, and calculus and to model physical situations. Students use a variety of representations (concrete, numerical, algorithmic, and graphical), tools, and technology to model functions and equations and solve real-life problems.

MATERIALS

Notebook (quad ruled preferred)
Loose leaf paper
Pencils
Small pencil sharpener
2" Binder
Dividers
Erasers

TEXTBOOK

Precalculus
Enhanced with Graphing Utilities
Sullivan & Sullivan
Pearson, *TX Ed.*

METHODS OF INSTRUCTION

Lectures / Cornell Notes
Teacher/Student Modeling
Small Group Instruction
Socratic Discussion
Question/Answer
One on One Tutoring
Peer Teaching
Guided Practice
Independent Practice

GRADING POLICY

60% Major Assignments (Tests, Projects, Writing Assignments)
40% Minor Assignments (Classwork, Homework, Quizzes)
see district grading policy for specifications

DIAMONDBACKS …

1. Are Respectful (zero tolerance for the use of inappropriate language)
2. Are Prepared and on Time
3. Are Active Learners
4. Follow all classroom and district procedure/policies (no prohibited electronic devices)

TUTORING

Tuesday & Thursday 4:05 – 4:45 pm. Any other day by appointment only.

Chapter 1 – Graphs
1.1 The Distance and Midpoint Formulas
1.2 Intercepts; Symmetry; Graphing Key Equations
1.3 Solving Equations Using a Graphing Utility
1.4 Lines
1.5 Circles

Chapter 2 – Functions and Their Graphs
2.1 Functions
2.2 The Graph of a Function
2.3 Properties of Functions
2.4 Library of Functions; Piecewise-defined Functions
2.5 Graphing Techniques: Transformations
2.6 Mathematical Models: Building Functions

Chapter 3 – Linear and Quadratic Functions
3.1 Linear Functions and Their Properties
3.2 Linear Models: Building Linear Functions from Data
3.3 Quadratic Functions and Their Properties
3.4 Build Quadratic Models from Verbal Descriptions and from Data
3.5 Inequalities Involving Quadratic Functions

Chapter 4 – Polynomial and Rational Functions
4.1 Polynomial Functions and Models
4.2 The Real Zeros of a Polynomial Function
4.3 Complex Zeros: Fundamental Theorem of Algebra
4.4 Properties of Rational Functions
4.5 The Graph of a Rational Function
4.6 Polynomial and Rational Inequalities

*******Mid Term Exam*******

Chapter 5 – Exponential and Logarithmic Functions
5.1 Composite Functions
5.2 One-to-One Functions: Inverse Functions
5.3 Exponential Functions
5.4 Logarithmic Functions
5.5 Properties of Logarithms
5.6 Logarithmic and Exponential Equations
5.7 Financial Models
5.8 Exponential Growth and Decay Models; Newton's Law; Logistic Growth & Decay Models
5.9 Building Exponential, Logarithmic, and Logistic Models from Data

Chapter 6 – Trigonometry Functions
6.1 Angles and Their Measure
6.2 Trigonometric Functions: Unit Circle Approach
6.3 Properties of the Trigonometric Functions
6.4 Graphs of Sine and Cosine Functions
6.5 Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions
6.6 Phase Shift; Sinusoidal Curve Fitting

Chapter 7 – Analytic Trigonometry
7.1 The Inverse Sine, Cosine, and Tangent Functions
7.2 The Inverse Trigonometric Functions (Continued)
7.3 Trigonometric Equations
7.4 Trigonometric Identities

Chapter 8 – Applications of Trigonometric Functions
8.1 Right Triangle Trigonometry; Applications
8.2 The Law of Sines
8.3 The Law of Cosines
8.4 Area of Triangle
8.5 Simple Harmonic Motion; Damped Motion; Combining Waves

****If time permits the following will be covered****

Chapter 14 – A Preview of Calculus: The Limit, Derivative, and Integrals
14.1 Finding Limits Using Tables and Graphs
14.2 Algebra Techniques for Finding Limits
14.3 One-Sided Limits; Continuous Functions
14.4 The Area Problem; The Derivative
14.5 The Area Problem; The Integral