

ShareWorld Learning Center
2020 Summer
Precalculus

This is an extension of Algebra 2 and Trigonometry. It covers advanced algebraic topics including Functions, Inequalities and Analytic Geometry.

Prerequisite: This is a very challenging course. Students taking this course should have completed Algebra 2 and Trigonometry. Students are also required to study Chapter P before the beginning of the class.

Textbook: Franklin Demana, Precalculus: Graphical, Numerical, Algebraic. (ISBN: 0-13-227650-x) Students are required to have a textbook two weeks prior to the first session.

Date & Day	Section	Topic
6/9/2020 Tuesday	1.1	Modeling and Equation Solving
	1.2	Functions and Their Properties
	1.3	Twelve Basic Functions
	1.4	Building Functions from Functions
6/11/2020 Thursday	1.5	Parametric Relations and Inverses
	1.6	Graphical Transformations
	1.7	Modeling with Functions
6/16/2020 Tuesday	2.1	Linear and Quadratic Functions and Modeling
	2.2	Power Functions with Modeling
	2.3	Polynomial Functions with Higher Degree with Modeling
6/18/2020 Thursday	2.4	Real Zeros of Polynomials Functions
	2.5	Complex Zeros and the Fundamental Theorem of Algebra
	2.6	Graph of Rational Functions
6/23/2020 Tuesday	2.7	Solving Equations in One Variable
	2.8	Solving Inequalities in One Variable
	3.1	Exponential and Logistic Functions
6/25/2020 Thursday	3.2	Exponential and Logistic Modeling
	3.3	Logarithmic Functions and Their Graphs
	3.4	Properties of Logarithmic Functions

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6/30/2020	3.5	Equation Solving and Modeling
Tuesday	3.6	Mathematics of Finance
	4.1	Angles and Their Measures
	4.2	Trigonometric Functions of Acute Angles
7/2/2020	4.3	Trigonometry Extended: The Circular Functions
Thursday	4.4	Graphs of Sine and Cosine: Sinusoids
	4.5	Graphs of Tangent, Cotangent, Secant, and Cosecant
	4.7	Inverse Trigonometric Functions
7/7/2020	4.8	Solving Problems with Trigonometry
Tuesday	5.1	Fundamental Identities
	5.2	Proving Trigonometric Identities
7/9/2020	5.3	Sum and Difference Identities
Thursday	5.4	Multiple-Angle Identities
	5.5	The Law of Sines
7/14/2020	5.6	The Law of Cosines
Tuesday	6.1	Vectors in the Plane
	6.2	Dot Products of Vectors
	6.3	Parametric Equations and Motion
7/16/2020	6.4	Polar Coordinates
Thursday	6.5	Graphs of Polar Equations
	6.6	De Moivre's Theorem and nth Roots
7/21/2020	7.1	Solving Systems of Two Equations
Tuesday	7.2	Matrix Algebra
	7.3	Multivariate Linear Systems and Row Operations

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7/23/2020	7.4	Partial Fractions
Thursday	7.5	Systems of Inequalities in Two Variables
	8.1	Conic Sections and Parabolas
	8.2	Ellipses
7/28/2020	8.3	Hyperbolas
Tuesday	8.4	Translation and Rotation of Axes
	8.5	Polar Equations of Conics
	8.6	Three-Dimensional Cartesian Coordinate System
7/30/2020	9.1	Basic Combinatorics
Thursday	9.2	The Binomial Theorem
	9.4	Sequences
8/4/2020	9.5	Series
Tuesday	9.6	Mathematical Induction
	10.1	Limits and Motion: The Tangent Problem
8/6/2020	10.3	More on Limits
Thursday		Derivatives

