

MA 180 Precalculus Videotapes Page 1 of 4

The following videotapes support topics found in MA 180. They directly correspond to material in *Precalculus Enhanced with Graphing Utilities*, 2nd edition, by Sullivan and Sullivan; Prentice Hall, 2000. (Most section numbers are consistent with those found in the 3rd edition.)

<u>Tape #</u>	<u>Section</u>	<u>Time</u>	<u>Title</u>
V180.01	N/A	17:40	Introduction
<i>Chapter 1: Graphs</i>			
V180.02	1.1	12:35	Rect. Coordinates; Graphing Utilities; Scatter Diagrams
	1.2	20:15	Graphs of Equations
	1.3	23:58	Solving Equations
	1.4	9:45	Setting Up Equations; Applications
	1.5	21:02	Solving Inequalities
	1.6	16:09	Lines
	1.7	11:20	Circles
<i>Chapter 2: Function and Models</i>			
V180.03	2.1	13:13	Functions
	2.2	11:37	Linear Functions and Models
	2.3	26:31	Characteristics of Functions; Library of Functions
	2.4	24:47	Graphing Techniques: Transformations
	2.5	10:03	Operations on Functions; Composite Functions
	2.6	10:31	Mathematical Models; Constructing Functions
<i>Chapter 3: Polynomial and Rational Functions</i>			
V180.04	3.1	23:30	Quadratic Functions and Models
	3.2	20:00	Power Functions and Models
	3.3	24:46	Polynomial Functions and Models
	3.4	21:56	The Real Zeros of a Polynomial Function
V180.05	3.5	14:14	Complex Numbers; Quadratic Equations with a Negative Discriminant
	3.6	14:51	Complex Zeros; Fundamental Theorem of Algebra
	3.7	21:23	Rational Functions
	3.8	11:36	Polynomial and Rational Inequalities

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<u>Tape #</u>	<u>Section</u>	<u>Time</u>	<u>Title</u>
<i>Chapter 4: Exponential and Logarithmic Functions</i>			
V180.06	4.1	19:30	One-to-One Functions; Inverse Functions
	4.2	16:55	Exponential Functions
	4.3	14:36	Logarithmic Functions
	4.4	9:35	Properties of Logarithms
	4.5	14:40	Logarithmic and Exponential Equations
V180.07	4.6	15:26	Compound Interest
	4.7	20:01	Growth and Decay
	4.8	12:52	Exponential, Logarithmic, and Logistic Curve Fitting
<i>Chapter 5: Trigonometric Functions</i>			
V180.08	5.1	21:39	Angles and Their Measure
	5.2	31:45	Trigonometric Functions: Unit Circle Approach
	5.3	23:59	Properties of the Trigonometric Functions
V180.09	5.4	12:10	Right Triangle Trigonometry
	5.5	20:32	Graphs of the Trigonometric Functions
	5.6	22:57	Sinusoidal Graphs; Sinusoidal Curve Fitting
<i>Chapter 6: Analytic Trigonometry</i>			
V180.10	6.1	10:40	Trigonometric Identities
	6.2	15:52	Sum and Difference Formulas
	6.3	18:54	Double-Angle and Half-Angle Formulas
	6.4	8:29	Product-to-Sum and Sum-to-Product Formulas
	6.5	32:20	The Inverse Trigonometric Functions
	6.6	9:05	Trigonometric Equations (I)
	6.7	13:40	Trigonometric Equations (II)
<i>Chapter 7: Applications of Trigonometric Functions</i>			
V180.11	7.1	8:09	Solving Right Triangles
	7.2	17:17	The Law of Sines
	7.3	8:36	The Law of Cosines
	7.4	5:14	The Area of a Triangle
	7.5	18:43	Simple Harmonic Motion; Damped Motion

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<u>Tape #</u>	<u>Section</u>	<u>Time</u>	<u>Title</u>
<i>Chapter 8: Polar Coordinates; Vectors</i>			
V180.12	8.1	15:43	Polar Coordinates
	8.2	29:35	Polar Equations and Graphs
	8.3	23:24	The Complex Plane; DeMoivre's Theorem
	8.4	18:43	Vectors
	8.5	19:19	The Dot Product
	8.6	21:15	Vectors in Space
<i>Chapter 9: Analytic Geometry</i>			
V180.13	9.1	N/A	No information available (Conics)
	9.2	17:37	The Parabola
	9.3	20:20	The Ellipse
	9.4	23:57	The Hyperbola
	9.5	23:38	Rotation of Axes; General form of a Conic
	9.6	21:54	Polar Equations of Conics
	9.7	17:28	Plane Curves and Parametric Equations
<i>Chapter 10: Systems of Equations and Inequalities</i>			
V180.14	10.1	16:39	Systems of Linear Equations: Two Equations Containing Two Variables
	10.2	11:10	Systems of Linear Equations: Two Equations Containing Three Variables
	10.3	17:28	Systems of Linear Equations: Matrices
	10.4	17:49	Systems of Linear Equations: Determinants
	10.5	23:39	Matrix Algebra
V180.15	10.6	24:48	Partial Fraction Decomposition
	10.7	17:16	Systems of Nonlinear Equations
	10.8	12:38	Systems of Linear Inequalities; Linear Programming
<i>Chapter 11: Sequences; Induction; the Binomial Theorem</i>			
V180.16	11.1	12:13	Sequences
	11.2	9:52	Arithmetic Sequences
	11.3	15:19	Geometric Sequences; Geometric Series
	11.4	5:34	Mathematical Induction
	11.5	7:16	The Binomial Theorem

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<u>Tape #</u>	<u>Section</u>	<u>Time</u>	<u>Title</u>
<i>Chapter 12: Counting and Probability</i>			
V180.17	12.1	13:13	Sets and Counting
	12.2	8:49	Permutations and Combinations
	12.3	11:44	Probability of Equally Likely Outcomes
	12.4	9:32	Analyzing Univariate Data; Obtaining Probabilities from Data

Chapter 13: A Preview of Calculus: the Limit and the Derivative of a Function

V180.18	13.1	15:10	Finding Limits Using Tables and Graphs
	13.2	26:47	Algebra Techniques of Finding Limits
	13.3	20:57	One-sided Limits; Continuous Functions
	13.4	20:52	The Tangent Problem; the Derivative

Appendices

V180.19	A.1	51:28	Topics from Algebra and Geometry
	A.2	N/A	No information available
	A.3	13:03	Polynomials
	A.4	7:55	Polynomial Division
	A.5	13:10	Rational Expressions
	A.6	24:30	Radicals; Rational Exponents

Miscellaneous Videos

VM.019	The Twisted World of Trigonometry – Part II
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