CORRELATION
SUNSHINE STATE STANDARDS

SUBJECT: Pre–Calculus

SUBMISSION TITLE: Advanced Mathematical Concepts: Precalculus with Applications ©2004

PUBLISHER: Glencoe

GRADE: Grades 9 to 12 and Adult

STRAND:

STANDARD 1. Demonstrate understanding of trigonometric functions and their inverses, trigonometric identities and equations, and their applications to problem–solving situations.

BENCHMARK	PAGES(S) OR LOCATIONS(S) WHERE TAUGHT	I/M*
MA.A.3.4.1 understand and explain the effects of addition, subtraction, multiplication, and division on real numbers, including square roots, exponents, and appropriate inverse relationships.	SE: 64–65, 78–80, 97–98, 119–120, 124, 137–138, 154–156, 167–168, 191–193, 223–227, 230–231, 237–238, 305–308, 405–406 TWE: 64–65, 78–80, 97–98, 119–120, 124, 137–138, 154–156, 167–168, 191–193, 223–227, 230–231, 237–238, 305–308, 405–406	**I**
MA.B.1.4.2 use concrete and graphic models to derive formulas for finding rate, distance, time, angle measures, and arc lengths.	SE: 17, 24, 76, 157, 166, 188, 205, 220, 242, 347, 354, 429, 434, 519, 612, 710, 712, 730, 769, TWE: 17, 24, 76, 157, 166, 188, 205, 220, 242, 347, 354, 429, 434, 519, 612, 710, 712, 730, 769,	**I**
MA.C.3.4.1 represent and apply geometric properties and relationships to solve real–world and mathematical problems including ratio, proportion, and properties of right triangle trigonometry.	SE: 141, 191, 248, 284–285, 287–289, 290, 311, 313–318, 327–330, 335–336, 345, 692 TWE: 141, 191, 248, 284–285, 287–289, 290, 311, 313–318, 327–330, 335–336, 345, 692	**I**

BENCHMARK	PAGES(S) OR LOCATIONS(S) WHERE TAUGHT	I/M*
MA.D.1.4.1 describe, analyze, and generalize relationships, patterns, and functions using words, symbols, variables, tables, and graphs.	SE: 14–18, 24–25, 46, 140–143, 159–162, 164–167, 186–187, 197–199, 185–189, 295–298, 336–337, 395–403, 406–412, 704–706, 718–719, 741–745, 782–783 TWE: 14–18, 24–25, 46, 140–143, 159–162, 164–167, 186–187, 197–199, 185–189, 295–298, 336–337, 395–403, 406–412, 704–706, 718–719, 741–745, 782–783	**I**
MA.D.1.4.2 determine the impact when changing parameters of given functions.	SE: 127–136, 137–145, 180–188, 359–367, 368–376, 378–386, 670–677 TWE: 127–136, 137–145, 180–188, 359–367, 368–376, 378–386, 670–677	**I**

STANDARD 2. Demonstrate understanding of the application of graphing techniques to trigonometric functions and their inverses.

BENCHMARK	PAGES(S) OR LOCATIONS(S) WHERE TAUGHT	I/M*
MA.A.4.4.1 use estimation strategies in complex situations to predict results and to check the reasonableness of results.	SE: 194, 272, 612, 660, 683, 744–745, 974 TWE: 194, 272, 612, 660, 683, 744–745, 974	**I**
MA.C.2.4.1 understand geometric concepts such as perpendicularity, parallelism, tangency, congruency, similarity, reflections, symmetry, and transformations including flips, slides, turns, enlargements, rotations, and fractals.	SE: 32–35, 88–92, 128–132, 205, 292, 488, 815, 953 TWE: 32–35, 88–92, 128–132, 205, 292, 488, 815, 953	**I**

STANDARD 3. Demonstrate use of vectors and parametric equations to solve problems.

BENCHMARK	PAGES(S) OR LOCATIONS(S) WHERE TAUGHT	I/M*
MA.B.2.4.2 solve real–world problems involving rated measures (miles per hour, feet per second).	SE: 76–77, 124, 157, 220, 223, 242, 255, 289, 291, 297, 311, 498, 540, 543 TWE: 76–77, 124, 157, 220, 223, 242, 255, 289, 291, 297, 311, 498, 540, 543	**I**
MA.C.3.4.2 using a rectangular coordinate system (graph), apply and algebraically verify properties of two– and three dimensional figures, including distance, midpoint, slope, parallelism, and perpendicularity.	SE: 22–23, 32–37, 272–273, 470–474, 556–557, 615–622, 949–950, 957–958 TWE: 22–23, 32–37, 272–273, 470–474, 556–557, 615–622, 949–950, 957–958	**I**

STANDARD 4. Demonstrate understanding of the connections between trigonometric functions, polar coordinates, and complex numbers.

BENCHMARK	PAGES(S) OR LOCATIONS(S) WHERE TAUGHT	I/M*
MA.A.1.4.3 understand concrete and symbolic representations of real and complex numbers in real–world situations.	This objective is addressed throughout the text. See, for example: SE: 33, 69, 95, 141, 195, 258, 277, 305, 354, 399, 437, 464, 495, 522, 563, 646, 704, 740, 772, 801, 825 TWE: 33, 69, 95, 141, 195, 258, 277, 305, 354, 399, 437, 464, 495, 522, 563, 646, 704, 740, 772, 801, 825	**I**
MA.A.2.4.3 understand the structure of the complex number system.	SE: 206–207, 580–585, 586–591, 593–598, 599–605 TWE: 206–207, 580–585, 586–591, 593–598, 599–605	**I**

STANDARD 5. Demonstrate understanding of the concept of limits; arithmetic and geometric sequences and series; and their applications, including definition of the derivative.

BENCHMARK	PAGES(S) OR LOCATIONS(S) WHERE TAUGHT	I/M*
MA.A.2.4.1 understand and use the basic concepts of limits and infinity.	SE: 774–778, 941–948 TWE: 774–778, 941–948	**I**
MA.A.5.4.1 apply special number relationships such as sequences and series to real–world problems.	SE: 759–765, 766–775, 776–785, 786–792, 794–799 TWE: 759–765, 766–775, 776–785, 786–792, 794–799	**I**

STANDARD 6. Demonstrate understanding of conic sections and loci.

BENCHMARK	PAGES(S) OR LOCATIONS(S) WHERE TAUGHT	I/M*
MA.C.2.4.2 analyze and apply geometric relationships involving planar cross–sections (the intersection of a plane and a three dimensional figure).	SE: 615–622, 623–630, 631–641, 642–652, 653–654 TWE: 615–622, 623–630, 631–641, 642–652, 653–654	**I**

STANDARD 7. Demonstrate understanding of polynomial and rational functions, their graphs, and their applications to problem–solving situations.

BENCHMARK	PAGES(S) OR LOCATIONS(S) WHERE TAUGHT	I/M*
MA.D.2.4.1 represent real–world problem situations using finite graphs, matrices, sequences, series, and recursive relations.	SE: 78–86, 759–765, 766–773, 774–783, 806–814, 829 TWE: 78–86, 759–765, 766–773, 774–783, 806–814, 829	**I**

STANDARD 8. Demonstrate understanding of the relationship between exponential and logarithmic functions and their application to problem–solving situations.

BENCHMARK	PAGES(S) OR LOCATIONS(S) WHERE TAUGHT	I/M*
MA.A.1.4.4 understand that numbers can be represented in a variety of equivalent forms, including integers, fractions, decimals, percents, scientific notation, exponents, radicals, absolute value, and logarithms.	SE: 29, 47–48, 51, 64, 142–144, 147–148, 179, 181, 197, 206, 243–248, 250–258, 273, 283, 341, 445, 698–700, 717, 726–728, 733–735, 744–745, 749, 835 TWE: 29, 47–48, 51, 64, 142–144, 147–148, 179, 181, 197, 206, 243–248, 250–258, 273, 283, 341, 445, 698–700, 717, 726–728, 733–735, 744–745, 749, 835	**I**

STANDARD 9. Solve complex systems of equations and inequalities, including use of matrix algebra.

BENCHMARK	PAGES(S) OR LOCATIONS(S) WHERE TAUGHT	I/M*
MA.D.2.4.2 use systems of equations and inequalities to solve real world problems graphically, algebraically, and with matrices.	SE: 67–72, 73–77, 78–86, 107–111, 112–118 TWE: 67–72, 73–77, 78–86, 107–111, 112–118	**I**

*Indepth/Mentioned