

Precalculus Table of Contents

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Converting From Degree Measure to Radian Measure

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Evaluate: $\sin \theta$, $\cos \theta$, $\sec \theta$, $\csc \theta$, $\tan \theta$, and $\cot \theta$.

Solving Trigonometric Equations (With and Without Calculator)

Solutions in Degrees

Solutions in Radians (in Terms of π)

Given $\sin \theta$, $\cos \theta$, or $\tan \theta$, as Well as the Quadrant Information

Evaluate the Other Trigonometric Functions (Exact Value Without a Calculator)

Evaluating $\sin \theta$, $\cos \theta$, $\tan \theta$, $\sec \theta$, $\csc \theta$, or $\cot \theta$, for ‘Common Values’ of θ expressed in Degrees or Radians (Without a Calculator)

Using a Calculator to Solve Trigonometric Equations

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Unit 4 Review #1

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Graphing Sine Functions : $y = A\sin(Bx + C) + D$

Basic Cycle

Mid-Line : $y = D$

Amplitude : $|A|$

Period : $2\pi/B$

Basic Cycle Starts : $Bx + C = 0$

Basic Cycle Ends : $Bx + C = 2\pi$

Understand the Difference Between $A < 0$ and $A > 0$

Extending the Graph

Graphing Cosine Functions : $y = A\cos(Bx + C) + D$

Basic Cycle

Mid-Line : $y = D$

Amplitude : $|A|$

Period : $2\pi/B$

Basic Cycle Starts : $Bx + C = 0$

Basic Cycle Ends : $Bx + C = 2\pi$

Understand the Difference Between $A < 0$ and $A > 0$

Extending the Graph

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Lesson 4: (For worksheet #4)

The Inverse Trigonometric Functions

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Precalculus Table of Contents

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Introduce and Prove the Pythagorean Identities

$$\sin^2 x + \cos^2 x = 1 ; \tan^2 x + 1 = \sec^2 x ; \cot^2 x + 1 = \csc^2 x$$

Simplifying Trigonometric Expressions

Proving Trigonometric Identities

Solving Trigonometric Equations (With or Without a Calculator)

Quiz #1

Lesson 2: (For worksheet #2)

The Sum and Difference Formulas : Proving and Applying

$$\sin(u + v) = (\sin u)(\cos v) + (\cos u)(\sin v)$$

$$\sin(u - v) = (\sin u)(\cos v) - (\cos u)(\sin v)$$

$$\cos(u + v) = (\cos u)(\cos v) - (\sin u)(\sin v)$$

$$\cos(u - v) = (\cos u)(\cos v) + (\sin u)(\sin v)$$

$$\tan(u + v) = [\tan u + \tan v] / [1 - (\tan u)(\tan v)]$$

$$\tan(u - v) = [\tan u - \tan v] / [1 + (\tan u)(\tan v)]$$

The Double Angle Formulas : Proving and Applying

$$\sin(2u) = 2(\sin u)(\cos u)$$

$$\cos(2u) = \cos^2 u - \sin^2 u$$

$$\tan(2u) = 2\tan u / (1 - \tan^2 u)$$

Quiz #2

Unit 5 Review

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Precalculus Table of Contents

Unit 6 :

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The Law of Sines : Prove and Apply

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Precalculus Table of Contents

Unit 7 :

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Systems of Linear Equations

Systems of 2 equations with 2 variables

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Solving Using Substitution

Solving Using Linear Combinations

Lesson 2: (For worksheets #2 and #3)

Systems of Linear Equations with 2 or More Variables

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Writing the 'Augmented Matrix' for the System

Elementary Row Operations

Reduced Row-Echelon Form

Quiz #1

Lesson 2: (For worksheet #4)

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Operations with Matrices

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Lesson 3: (For worksheet #5)

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Using Elementary Row Operations

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Unit 7 Review

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Precalculus Table of Contents

Unit 8 :

Lesson 1: (For worksheet #1)

Second Degree Equations with 2 Variables

$$\text{General Form: } Ax^2 + Cy^2 + Dx + Ey + F = 0$$

Identifying, Writing the Equation in 'Standard Form' and Graphing

Circle, Ellipse, Hyperbola, and Parabola

Lesson 2: (For worksheet #2)

Second Degree Equations with 2 Variables

$$\text{General Form: } Ax^2 + Bxy + Cy^2 + Dx + Ey + F = 0, B \neq 0$$

Identifying as a Circle, Ellipse, Hyperbola, or Parabola

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The Angle 'Between' Two Lines

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Quiz #1

Lesson 3: (For worksheet #3)

Polar Equations

Polar Coordinates (r, θ) and Cartesian Coordinates (x, y)

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Converting Equations from 'Rectangular' Form to Polar Form

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Polar Equation for Conic Sections

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Identify and Graph

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'Plane Curves'

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Unit 8 Test