

Section 5.3 Solving Trigonometric Equations

Objective: In this lesson you learned how to use standard algebraic techniques and inverse trigonometric functions to solve trigonometric equations.

Course Number

Instructor

Date

I. Introduction (Pages 389–391)

To solve a trigonometric equation, . . .

What you should learn

How to use standard algebraic techniques to solve trigonometric equations

The preliminary goal in solving trigonometric equations is . . .

How many solutions does the equation $\sec x = 2$ have? Explain.

Example 1: Solve $2 \cos^2 x - 1 = 0$.

To solve an equation in which two or more trigonometric functions occur, . . .

II. Equations of Quadratic Type (Pages 391–393)

Give an example of a trigonometric equation of quadratic type.

What you should learn

How to solve trigonometric equations of quadratic type

To solve a trigonometric equation of quadratic type, . . .

Example 2: Solve $\tan^2 x + 2 \tan x = -1$.

Care must be taken when squaring both sides of a trigonometric equation to obtain a quadratic because . . .

III. Functions Involving Multiple Angles (Page 394)

Give an example of a trigonometric function of multiple angles.

Example 3: Solve $\sin 4x = \frac{\sqrt{2}}{2}$.

What you should learn
How to solve
trigonometric equations
involving multiple angles

IV. Using Inverse Functions (Page 395)

Example 4: Use inverse functions to solve the equation $\tan^2 x + 4 \tan x + 4 = 0$.

What you should learn
How to use inverse
trigonometric functions
to solve trigonometric
equations

Homework Assignment

Page(s)

Exercises