Course Number

Instructor

Date

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.

I. Introduction (Pages 368–370)

What you should learn
How to use standard algebraic techniques to solve trigonometric equations

To solve a trigonometric equation, . . .

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 370–372)

What you should learn
How to solve trigonometric equations of quadratic type

Give an example of a trigonometric equation 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 each side of a trigonometric equation to obtain a quadratic because . . .

III. Functions Involving Multiple Angles (Page 373)

Give an example of a trigonometric function of multiple angles.

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

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

IV. Using Inverse Functions (Page 374–375)

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