

Section 4.7 Inverse Trigonometric Functions

Objective: In this lesson you learned how to evaluate the inverse trigonometric functions and compositions of trigonometric functions with inverse trigonometric functions.

Course Number

Instructor

Date

I. Inverse Sine Function (Pages 343–344)

The **inverse sine function** is defined by . . .

What you should learn

How to evaluate and graph the inverse sine function

The domain of $y = \arcsin x$ is _____. The range of $y = \arcsin x$ is _____.

Example 1: Find the exact value: $\arcsin(-1)$.

II. Other Inverse Trigonometric Functions (Pages 345–346)

The **inverse cosine function** is defined by . . .

What you should learn

How to evaluate and graph the other inverse trigonometric functions

The domain of $y = \arccos x$ is _____. The range of $y = \arccos x$ is _____.

Example 2: Find the exact value: $\arccos \frac{1}{2}$.

The **inverse tangent function** is defined by . . .

The domain of $y = \arctan x$ is _____. The range of $y = \arctan x$ is _____.

Example 3: Find the exact value: $\arctan(\sqrt{3})$.

Example 4: Use a calculator to approximate the value (if possible). Round to four decimal places.
 (a) $\arcsin 0.85$ (b) $\arccos 3.1415$

III. Compositions of Functions (Pages 347–348)

State the Inverse Property for the Sine function.

What you should learn
 How to evaluate and graph the compositions of trigonometric functions

State the Inverse Property for the Cosine function.

State the Inverse Property for the Tangent function.

The inverse properties do not apply for arbitrary values of x and y . For example, the inverse property for the sine function is not value for values of y outside the interval

_____.

Example 5: If possible, find the exact value:
 (a) $\arcsin(\sin 3\pi/4)$ (b) $\cos(\arccos 0)$

Homework Assignment

Page(s)

Exercises