

## 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 412–413)

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

*What you should learn*

How to evaluate 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 414–415)

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

*What you should learn*

How to evaluate 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)  $\arcsin 3.1415$

### III. Compositions of Functions (Pages 416–417)

State the Inverse Property for the Sine function.

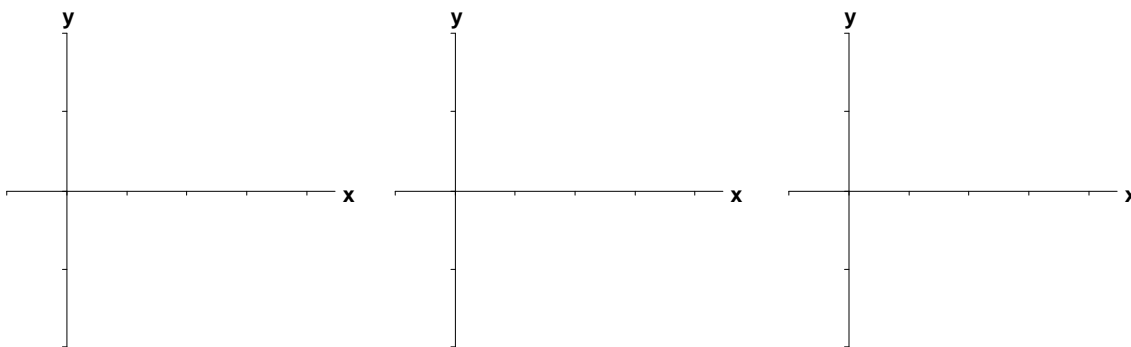
***What you should learn***  
How to evaluate the compositions of trigonometric functions

State the Inverse Property for the Cosine function.

State the Inverse Property for the Tangent function.

**Example 5:** If possible, find the exact value:

- (a)  $\arcsin(\sin 3\pi/4)$       (b)  $\cos(\arccos 0)$



#### Homework Assignment

Page(s)

Exercises