

High School Functions Playlist: Inverses of Trigonometric Functions

Aligns with *CCSS.MATH.CONTENT.HSF.TF.B.6*: Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed.

Related Standards

- *CCSS.MATH.CONTENT.HSF.IF.A.1*: Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.
- *CCSS.MATH.CONTENT.HSF.BF.B.4*: Find inverse functions.
- *CCSS.MATH.CONTENT.HSF.TF.B.7*: Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.

PREVIEW



Objectives

In this module, you will learn and practice the following skills:

- Restricting the domain of a trigonometric function so that its inverse can be found
- Finding the inverse of a trigonometric function on a restricted domain

Let's get started!

Key Terms

- One test to see if the inverse of a function is itself a function is the **horizontal line test**. If, over the specified domain of the function, there is a horizontal line that intersects the graph of the function more than once, then the inverse will not be a function.
- A **restricted domain** is a subset of the domain of a function chosen, for example, so that an inverse function can be defined.

Connections

- <https://openstaxcollege.org/textbooks/algebra-and-trigonometry>; section 8.3
- www.ck12.org/book/CK-12-Trigonometry-Second-Edition; sections 4.1-4.3

