

Section 1.9 Inverse Functions

Objective: In this lesson you learned how to find inverse functions graphically and algebraically.

Course Number

Instructor

Date

Important Vocabulary

Define each term or concept.

Inverse function

Horizontal Line Test

I. Inverse Functions (Pages 93–94)

For a function f that is defined by a set of ordered pairs, to form the inverse function of f , . . .

What you should learn
How to find inverse functions informally and verify that two functions are inverse functions of each other

For a function f and its inverse f^{-1} , the domain of f is equal to _____, and the range of f is equal to _____.

To verify that two functions, f and g , are inverse functions of each other, . . .

Example 1: Verify that the functions $f(x) = 2x - 3$ and $g(x) = \frac{x+3}{2}$ are inverse functions of each other.

II. The Graph of an Inverse Function (Page 95)

If the point (a, b) lies on the graph of f , then the point (_____) must lie on the graph of f^{-1} and vice versa. The graph of f^{-1} is a *reflection* of the graph of f in the line _____.

What you should learn
How to use graphs of functions to determine whether functions have inverse functions

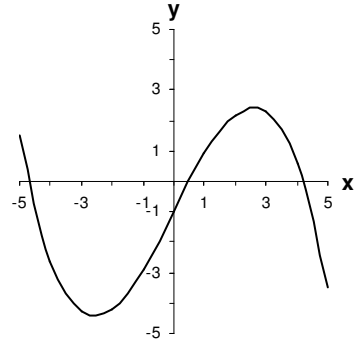
III. One-to-One Functions (Page 96)

To tell whether a function has an inverse function from its graph, . . .

What you should learn
 How to use the Horizontal Line Test to determine if functions are one-to-one

A function f is **one-to-one** if . . .

A function f has an inverse function if and only if f is _____.



Example 2: Does the graph of the function at the right have an inverse function? Explain.

IV. Finding Inverse Functions Algebraically (Pages 97–98)

To find the inverse of a function f algebraically, . . .

What you should learn
 How to find inverse functions algebraically

- 1)
- 2)
- 3)
- 4)
- 5)

Example 3: Find the inverse (if it exists) of $f(x) = 4x - 5$.

Homework Assignment

Page(s)

Exercises