

Section 1.6 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**One-to-one****Horizontal Line Test****I. Inverse Functions** (Pages 62–64)

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

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 inverses of each other, . . .

Example 1: Verify that the functions $f(x) = 2x - 3$ and

$$g(x) = \frac{x + 3}{2}$$

are inverses of each other.

II. The Graph of an Inverse Function (Page 65)

If the point (a, b) lies on the graph of f , then the point (_____) lies 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 find inverse functions informally and verify that two functions are inverse functions of each other

What you should learn

How to use graphs of functions to decide whether functions have inverse functions

III. The Existence of an Inverse Function (Page 66)

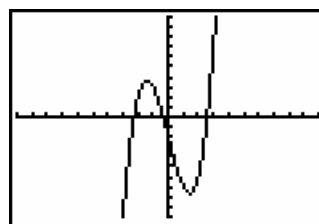
If a function is **one-to-one**, that means . . .

What you should learn
How to determine if
functions are one-to-one

A function f has an inverse f^{-1} if and only if . . .

To tell whether a function is one-to-one from its graph, . . .

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

**IV. Finding Inverse Functions Algebraically** (Pages 67–68)

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

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

What you should learn
How to find inverse
functions algebraically

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

Homework Assignment

Page(s)

Exercises