

Section P.9 Inverse Functions

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

Course Number

Instructor

Date

Important Vocabulary

Define each term or concept.

Inverse

Horizontal Line Test

I. The Inverse of a Function (Pages 99–100)

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 inverses 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 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 the Inverse of a Function (Pages 101–102)

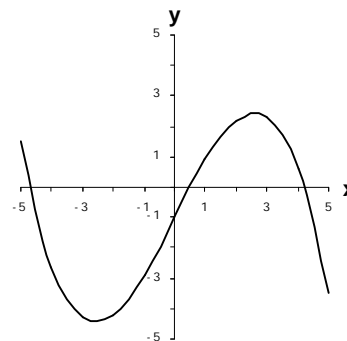
If the point (a, b) lies on the graph of f , then the point (_____) lies on the graph of f^{-1} and vice versa. The graph of f^{-1} is a reflection of the graph of f in the line _____.

What you should learn

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

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

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



III. Finding the Inverse of a Function Algebraically

(Pages 103–104)

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 $f(x) = 4x - 5$.

Additional notes

Homework Assignment

Page(s)

Exercises