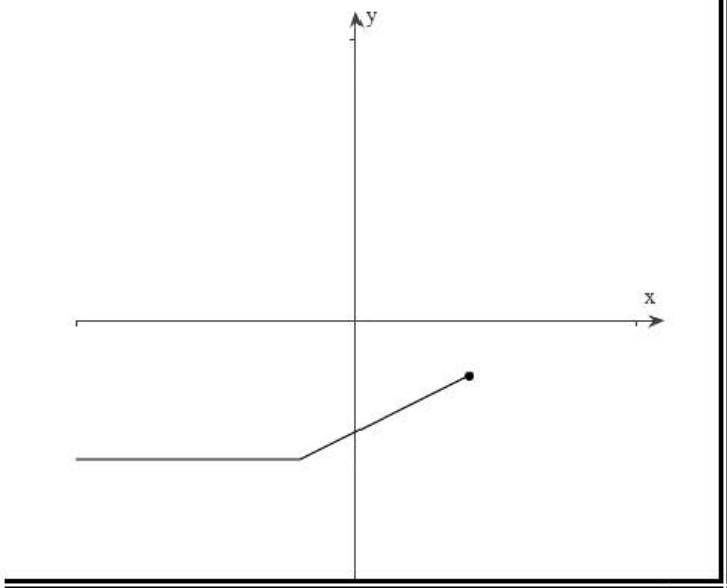
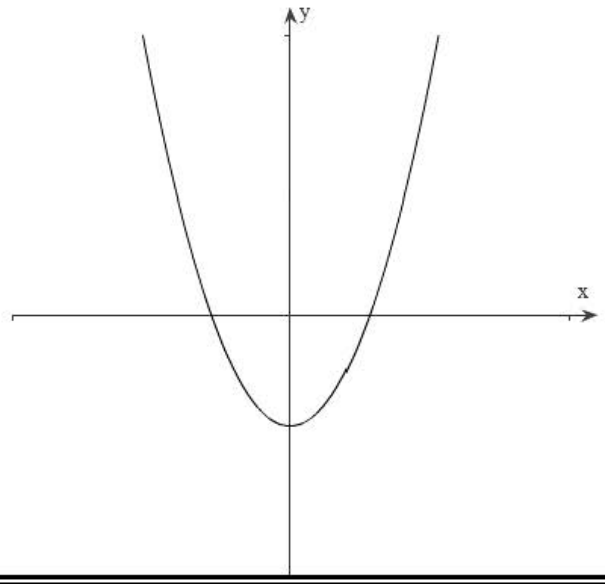
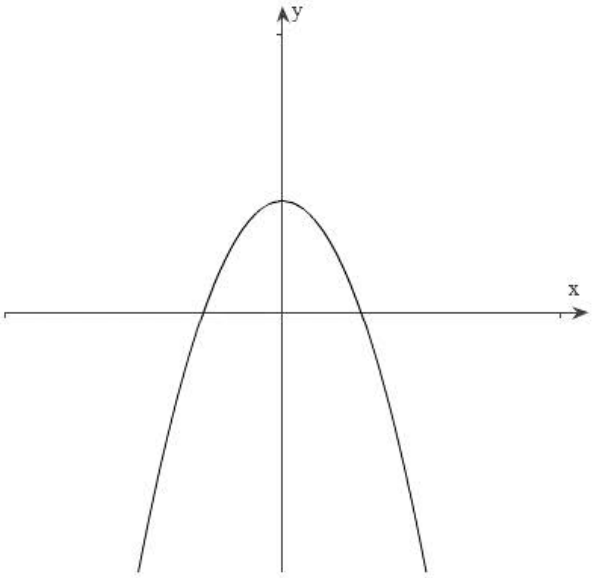
The Horizontal Line Test for Inverse Functions

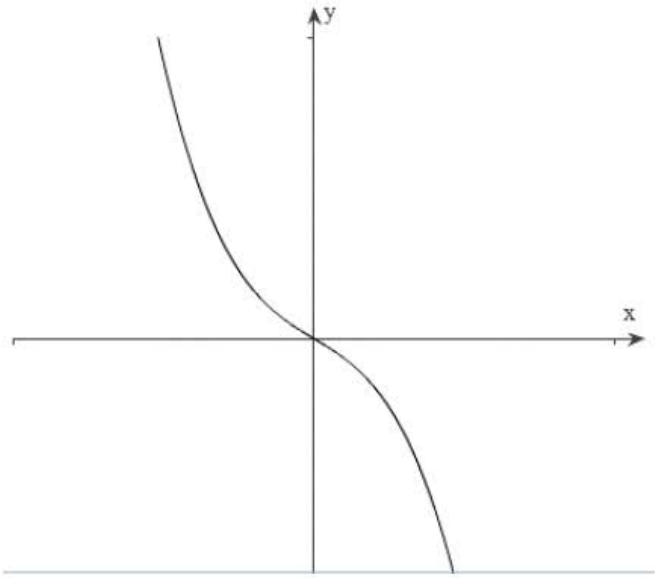
A function f has an inverse that is a function, f^{-1}, is there is no horizontal line that intersects the graph of the function f at more than one point.

Example 4: Which of the following graphs represent functions that have inverse functions?









One-to-one function

A **one-to-one function** is a function in which no two different ordered pairs have the same second component. Only one-to-one functions have inverse functions.