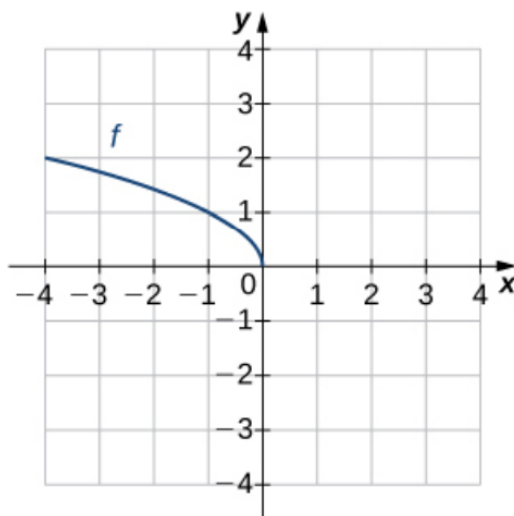


## Exercise 198

For the following exercises, use the graph of  $f$  to sketch the graph of its inverse function.



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### Solution

The function graphed in the figure is

$$f(x) = \sqrt{-x}.$$

To find the inverse function, replace  $x$  with  $y$  and replace  $f(x)$  with  $x$ .

$$x = \sqrt{-y}$$

$$x^2 = -y$$

$$y = -x^2$$

The domain of this inverse function is  $x > 0$  because  $x$  came from  $f(x)$ , which is a square root function.

Both functions are plotted together versus  $x$  below. Notice that they are reflections of each other across the line  $y = x$ .

