

Exercise 43

For the following exercises, find the inverse function. Then, graph the function and its inverse.

$$f(x) = x^3 - 1$$

Solution

In order to find the inverse function, switch x with y in the given equation.

$$x = y^3 - 1$$

Now solve for y .

$$x + 1 = y^3$$

$$\sqrt[3]{x + 1} = \sqrt[3]{y^3}$$

$$\sqrt[3]{x + 1} = y$$

Therefore, the inverse function is

$$f^{-1}(x) = \sqrt[3]{x + 1}.$$

