Exercise 190

For the following exercises, a. find the inverse function, and b. find the domain and range of the inverse function.

$$f(x) = \sqrt[3]{x-4}$$

Solution

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

$$x = \sqrt[3]{y-4}$$

Solve for y.

$$x^3 = y - 4$$

$$y = x^3 + 4$$

The domain of this inverse function is

$$\{x \mid -\infty < x < \infty\},$$

and the range is $\{y \mid -\infty < y < \infty\}$.