Exercise 194

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

$$f(x) = \frac{1}{x+2}$$

Solution

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

$$x = \frac{1}{y+2}$$

Solve for y.

$$\frac{1}{x} = y + 2$$

$$y = \frac{1}{x} - 2$$

The domain of this inverse function is

$$\{x \mid x \neq 0\},$$

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