

Exercise 315

For the following problems, state the domain and range of the given functions:

$$f = x^2 + 2x - 3, \quad g = \ln(x - 5), \quad h = \frac{1}{x + 4}$$

g

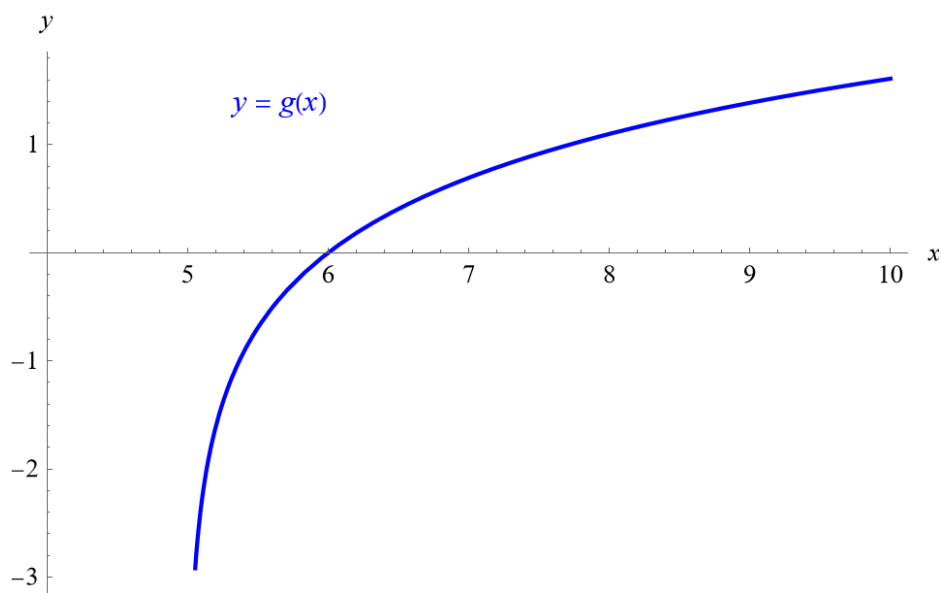
Solution

g is a logarithmic function, and the one thing to know about logarithmic functions is that the argument must be positive.

$$x - 5 > 0$$

$$x > 5$$

Therefore, the domain is $\{x \mid x > 5\}$. Below is a graph of $g(x)$ versus x .



The logarithmic function takes on all y -values. Therefore, the range is $\{y \mid -\infty < y < \infty\}$.