

Exercise 9

Sketch the graph of an example of a function f that satisfies all of the given conditions.

$$f(0) = 3, \quad \lim_{x \rightarrow 0^-} f(x) = 4, \quad \lim_{x \rightarrow 0^+} f(x) = 2,$$

$$\lim_{x \rightarrow -\infty} f(x) = -\infty, \quad \lim_{x \rightarrow 4^-} f(x) = -\infty, \quad \lim_{x \rightarrow 4^+} f(x) = \infty,$$

$$\lim_{x \rightarrow \infty} f(x) = 3$$

Solution

Below is the graph of a function that satisfies these conditions.

