Exercise 3

Explain the meaning of each of the following.

(a) $\lim_{x \to -3} f(x) = \infty$ (b) $\lim_{x \to 4^+} f(x) = -\infty$

Solution

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

means that as x approaches -3 from below $(-3.1, -3.01, \ldots)$ and above $(-2.9, -2.99, \ldots)$, the function f becomes positively infinite. On the other hand,

$$\lim_{x \to 4^+} f(x) = -\infty$$

means that as x approaches 4 from above $(4.1, 4.01, \ldots)$, the function f becomes negatively infinite.