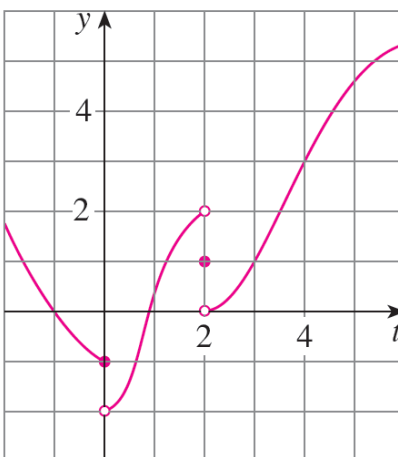


Exercise 7

For the function g whose graph is given, state the value of each quantity, if it exists. If it does not exist, explain why.

- (a) $\lim_{t \rightarrow 0^-} g(t)$ (b) $\lim_{t \rightarrow 0^+} g(t)$ (c) $\lim_{t \rightarrow 0} g(t)$
 (d) $\lim_{t \rightarrow 2^-} g(t)$ (e) $\lim_{t \rightarrow 2^+} g(t)$ (f) $\lim_{t \rightarrow 2} g(t)$
 (g) $g(2)$ (h) $\lim_{t \rightarrow 4} g(t)$



Solution

$$\lim_{t \rightarrow 0^-} g(t) = -1$$

$$\lim_{t \rightarrow 0^+} g(t) = 1$$

$$\lim_{t \rightarrow 0} g(t) \text{ does not exist because } \lim_{t \rightarrow 0^-} g(t) \neq \lim_{t \rightarrow 0^+} g(t)$$

$$\lim_{t \rightarrow 2^-} g(t) = 2$$

$$\lim_{t \rightarrow 2^+} g(t) = 1$$

$$\lim_{t \rightarrow 2} g(t) \text{ does not exist because } \lim_{t \rightarrow 2^-} g(t) \neq \lim_{t \rightarrow 2^+} g(t)$$

$$g(2) = 1$$

$$\lim_{t \rightarrow 4} g(t) = 3$$