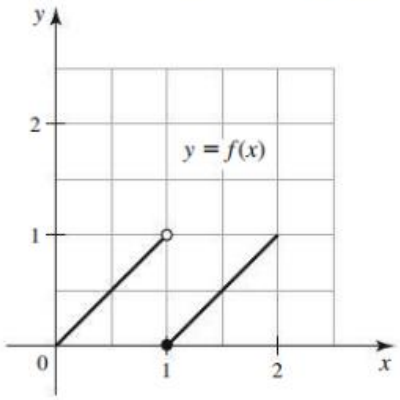
2.1-2.2 Group Activity Problems

15. Use the graph of f in the figure to find the following values or state that they do not exist. If a limit does not exist, explain why.

a. $f(1)$ **b.** $\lim_{x \to 1^-} f(x)$ **c.** $\lim_{x \to 1^+} f(x)$ **d.** $\lim_{x \to 1} f(x)$

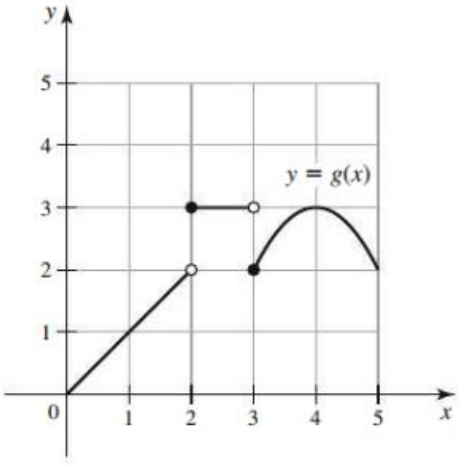


18. One-sided and two-sided limits Use the graph of g in the figure to find the following values or state that they do not exist. If a limit does not exist, explain why.

a. $g(2)$ **b.** $\lim_{x \to 2^-} g(x)$ **c.** $\lim_{x \to 2^+} g(x)$

d. $\lim_{x \to 2} g(x)$ **e.** $g(3)$ **f.** $\lim_{x \to 3^-} g(x)$

g. $\lim_{x \to 3^+} g(x)$ **h.** $g(4)$ **i.** $\lim_{x \to 4} g(x)$



Practice Exercises

19–26. Evaluating limits graphically *Sketch a graph of f and use it to make a conjecture about the values of* $f(a)$, $\lim_{x \to a^-} f(x)$, $\lim_{x \to a^+} f(x)$, *and* $\lim_{x \to a} f(x)$ *or state that they do not exist.*

19. $f(x) = \begin{cases} x^2 + 1 & \text{if } x \leq -1 \\ 3 & \text{if } x > -1 \end{cases}; a = -1$

20. $f(x) = \begin{cases} 3 - x & \text{if } x < 2 \\ x - 1 & \text{if } x > 2 \end{cases}; a = 2$