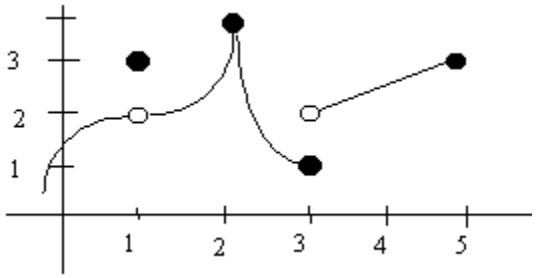
1. Below is a graph of the function f(x).



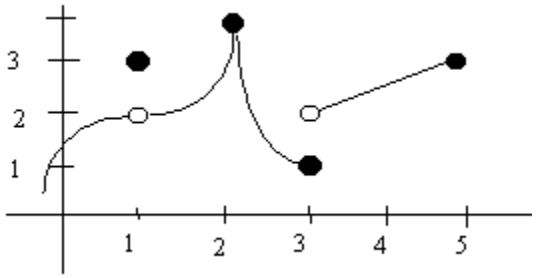
Find each limit. If the limit does not exist, explain why.

a) $\lim_{x \to 2^+} f(x)$

b) $\lim_{x \to 2^-} f(x)$

c) $\lim_{x \to 2} f(x)$

2. Below is a graph of the function f(x).



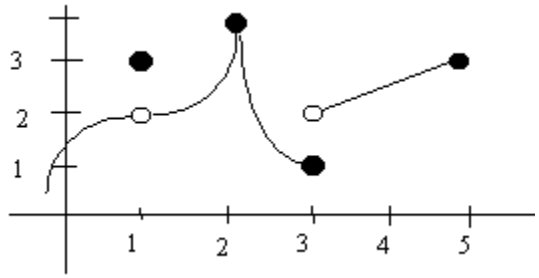
Find each limit. If the limit does not exist, explain why.

a) $\lim_{x \to 1^+} f(x)$

b) $\lim_{x \to 1^-} f(x)$

c) $\lim_{x \to 1} f(x)$

3. Below is a graph of the function f(x).



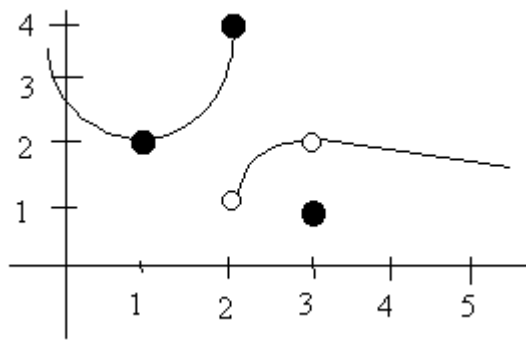
Find each limit. If the limit does not exist, explain why.

a) $\lim_{x \to 3^+} f(x)$

b) $\lim_{x \to 3^-} f(x)$

c) $\lim_{x \to 3} f(x)$

4. Below is a graph of the function *g*(x).



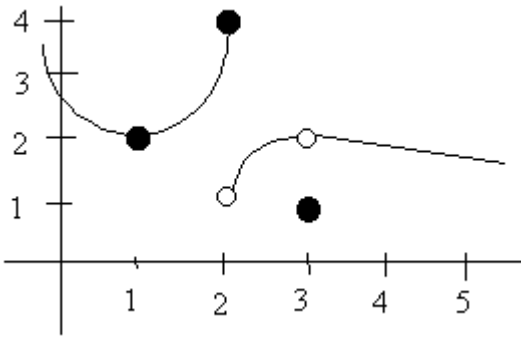
Find each limit. If the limit does not exist, explain why.

a) $\lim_{x \to 2^+} g(x)$

b) $\lim_{x \to 2^-} g(x)$

c) $\lim_{x \to 2} g(x)$

5. Below is a graph of the function *g*(x).



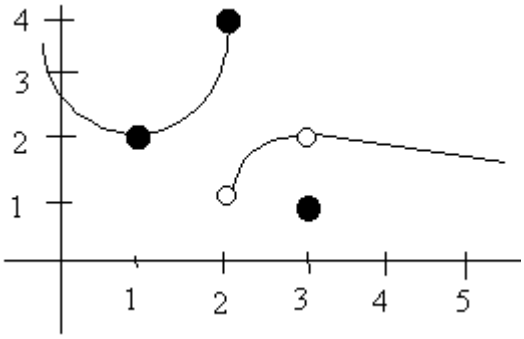
Find each limit. If the limit does not exist, explain why.

a) $\lim_{x \to 3^+} g(x)$

b) $\lim_{x \to 3^-} g(x)$

c) $\lim_{x \to 3} g(x)$

6. Below is a graph of the function *g*(x).



Find each limit. If the limit does not exist, explain why.

a) $\lim_{x \to 1^+} g(x)$

b) $\lim_{x \to 1^-} g(x)$

c) $\lim_{x \to 1} g(x)$

7. Find the limit graphically.

$$\lim_{x \to 2} \frac{t^2 - 3t + 2}{t^2 - 4}$$

8. Find the limit graphically.

$$\lim_{x \to 0} \frac{\frac{1}{2+x} - \frac{1}{2}}{x}$$

Answers:

1. **a.** 4
b. 4
c. 4

2. **a.** 2
b. 2
c. 2

3. **a.** 2
b. 1
c. DNE b/c limit of $f(x)$ from the left of 3 does not equal the limit of $f(x)$ from the right of 3.
or
DNE b/c $\lim_{x \to 3^-} f(x) \neq \lim_{x \to 3^+} f(x)$

4. **a.** 1
b. 4
c. DNE b/c limit of $f(x)$ from the left of 2 does not equal the limit of $f(x)$ from the right of 2.
or
DNE b/c $\lim_{x \to 2^-} f(x) \neq \lim_{x \to 2^+} f(x)$

5. **a.** 2
b. 2
c. 2

6. **a.** 2
b. 2
c. 2

7. ¼

8. –¼