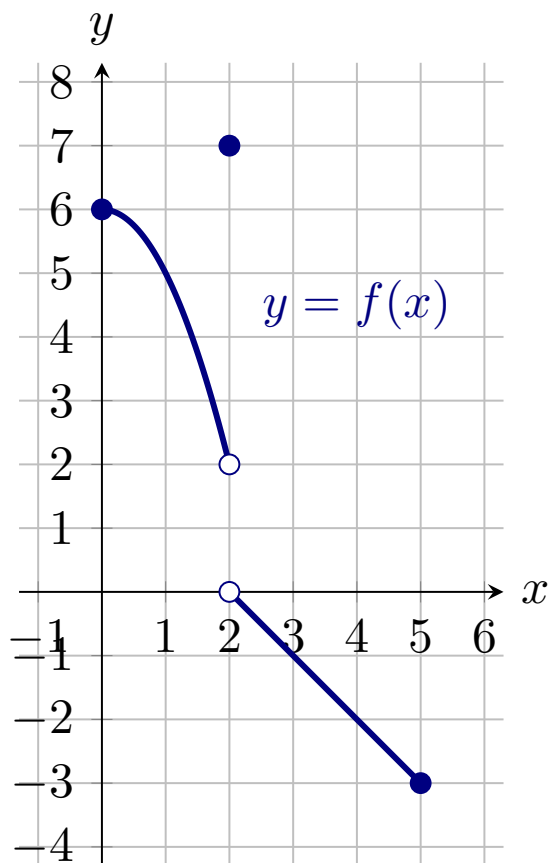


Exercise 1 The entire graph of a function f is given below.



The slope of line at the point $(4, -2)$ is $\boxed{-1}$.

Find the following limits, if they exist. If a limit does not exist, explain why.

$$\lim_{x \rightarrow 2^+} f(x) = \boxed{0}$$

Multiple Choice:

- (a) The limit does exist. ✓
- (b) The limit does not exist because f is not defined the same to the left and right of 2.
- (c) The limit does not exist because $f(2)$ is very different from the values of f near 2.

- (d) The limit does not exist because $\lim_{x \rightarrow 2^-} f(x) \neq \lim_{x \rightarrow 2^+} f(x)$.
-

$$\lim_{x \rightarrow 2^-} f(x) = \boxed{2}$$

Multiple Choice:

- (a) The limit does exist. ✓
(b) The limit does not exist because f is not defined the same to the left and right of 2.
(c) The limit does not exist because $f(2)$ is very different from the values of f near 2.
(d) The limit does not exist because $\lim_{x \rightarrow 2^-} f(x) \neq \lim_{x \rightarrow 2^+} f(x)$.
-

$$\lim_{x \rightarrow 2} f(x) = \boxed{DNE}$$

Multiple Choice:

- (a) The limit does exist.
(b) The limit does not exist because f is not defined the same to the left and right of 2.
(c) The limit does not exist because $f(2)$ is very different from the values of f near 2.
(d) The limit does not exist because $\lim_{x \rightarrow 2^-} f(x) \neq \lim_{x \rightarrow 2^+} f(x)$. ✓
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$$\lim_{x \rightarrow 4} f(x) = \boxed{-2}$$

Multiple Choice:

- (a) The limit does exist. ✓
(b) The limit does not exist because f is flat near 4.
(c) The limit does not exist because $f(4)$ is very different from the values of f near 4.
(d) The limit does not exist because $\lim_{x \rightarrow 4^-} f(x) \neq \lim_{x \rightarrow 4^+} f(x)$.
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