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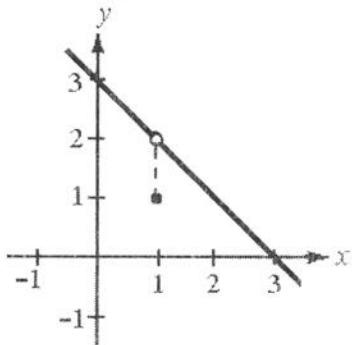
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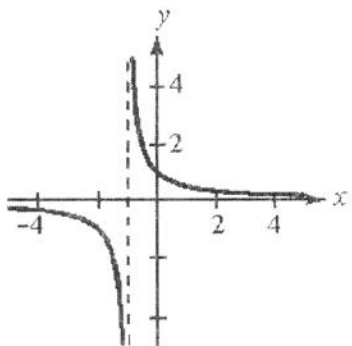
1. Use the graph to find $\lim_{x \rightarrow 1} f(x)$ for

$$f(x) = \begin{cases} 3-x, & x \neq 1 \\ 1, & x = 1 \end{cases}$$



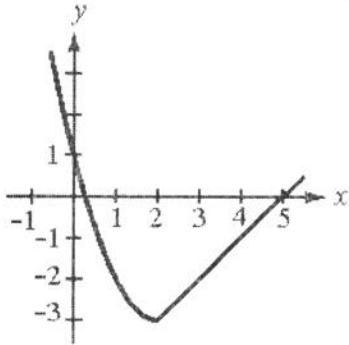
- [A] 2 [B] $\frac{3}{2}$ [C] The limit does not exist [D] 1 [E] None of these

2. Use the graph of find $\lim_{x \rightarrow -1} f(x)$ for $f(x) = \frac{1}{x+1}$.



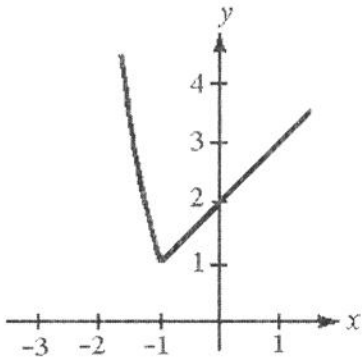
- [A] 1 [B] ∞ [C] The limit does not exist [D] 0 [E] None of these

3. Use the graph to estimate $\lim_{x \rightarrow 2} f(x)$.



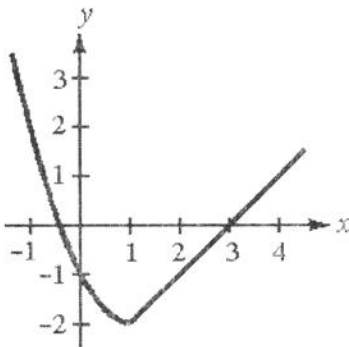
- [A] The limit does not exist [B] 0 [C] 2 [D] -3 [E] None of these

4. Use the graph to estimate $\lim_{x \rightarrow -1} f(x)$.



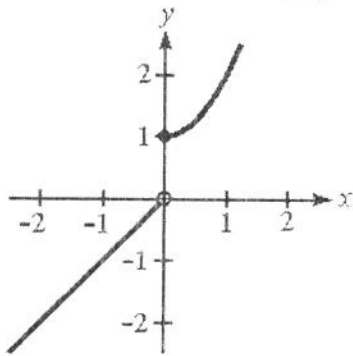
- [A] The limit does not exist [B] -1 [C] 1 [D] 0 [E] None of these

5. Use the graph to estimate $\lim_{x \rightarrow 1} f(x)$.

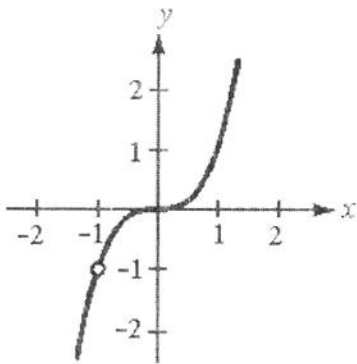


- [A] 1 [B] The limit does not exist [C] 0 [D] -2 [E] None of these

6. Use the graph to find $\lim_{x \rightarrow 0} f(x)$ (if it exists).

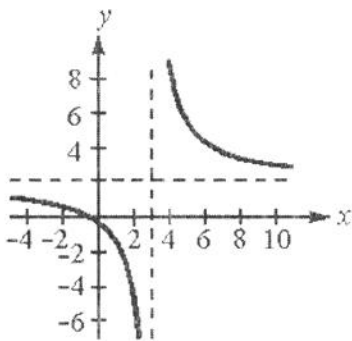


7. Use the graph to find $\lim_{x \rightarrow -1} f(x)$ (if it exists).



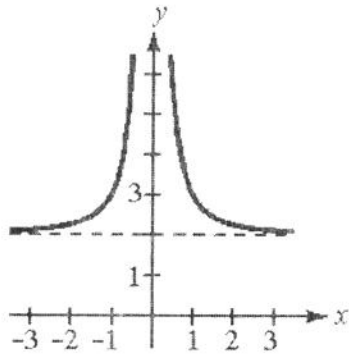
- [A] 1 [B] The limit does not exist. [C] -2 [D] -1 [E] -3

8. Use the graph to find $\lim_{x \rightarrow 3} f(x)$ (if it exists) for $f(x) = \frac{2x+1}{x-3}$.



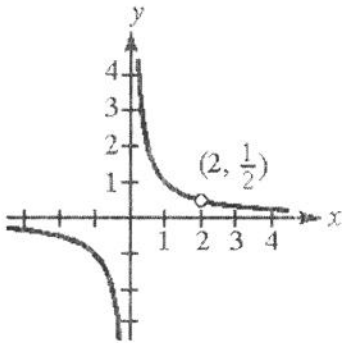
- [A] 2 [B] The limit does not exist. [C] $-\frac{1}{2}$ [D] 3 [E] None of these

9. Use the graph to find $\lim_{x \rightarrow 0} f(x)$ (if it exists) for $f(x) = \frac{1}{x^2} + 2$.



- [A] 0 [B] 2 [C] The limit does not exist [D] 3 [E] None of these

10. Use the graph to find $\lim_{x \rightarrow 2} f(x)$ (if it exists) for $f(x) = \frac{x-2}{x^2-2x}$.



- [A] The limit does not exist. [B] 2 [C] 0 [D] $\frac{1}{2}$ [E] None of these

11. Use a graphing utility to graph the function for $f(x) = -x^2 + 4x$ and then estimate $\lim_{x \rightarrow 2} f(x)$ (if it exists).

- [A] -12 [B] 0 [C] 4 [D] 12 [E] None of these

12. Let $f(x) = \begin{cases} 3x-1, & x \leq 1 \\ \frac{3}{2}x^2, & x > 1 \end{cases}$. Find the limit: $\lim_{x \rightarrow 1} f(x)$.

- [A] The limit does not exist. [B] $\frac{3}{2}$ [C] 2 [D] 2 and $\frac{3}{2}$ [E] None of these

13. Let $f(x) = \begin{cases} 3x-1, & x \leq 1 \\ 2x^2, & x > 1 \end{cases}$. Find the limit: $\lim_{x \rightarrow 1} f(x)$.

- [A] 2 [B] The limit does not exist. [C] 1 [D] 0 [E] None of these

14. Let $f(x) = \begin{cases} x, & x \leq 0 \\ x^2, & x > 0 \end{cases}$. Sketch a graph of f and find the limit: $\lim_{x \rightarrow 0} f(x)$.

15. Determine whether the statement is true or false. If it is false, give an example to show that it is false.

If $\lim_{x \rightarrow 3} f(x) = 9$, then $f(3) = 9$.

16. Given $\lim_{x \rightarrow 2} (2x - 1) = 3$. Find δ such that $|(2x - 1) - 3| < 0.01$ whenever $0 < |x - 2| < \delta$.

- [A] 3 [B] 0.005 [C] 0.03 [D] 0.05 [E] None of these

17. Given $\lim_{x \rightarrow 1} (2x + 1) = 3$. Find δ such that $|(2x + 1) - 3| < 0.01$ whenever $0 < |x - 1| < \delta$.

- [A] 0.005 [B] 3 [C] 1 [D] 0.05 [E] None of these

18. If $\lim_{x \rightarrow 3} (3x - 2) = 7$, find δ such that $|(3x - 2) - 7| < 0.003$ whenever $0 < |x - 3| < \delta$.

19. Sketch the graph of a function $y = f(x)$ such that $\lim_{x \rightarrow 2} f(x)$ does not exist.

20. Sketch the graph of a function $y = f(x)$ such that $\lim_{x \rightarrow -1} f(x)$ does not exist.