

[1] _____

[2] _____

[3] _____

[4] _____

[5] _____

[6] _____

[7] _____

[8] _____

[9] _____

[10] _____

[11] _____

[12] _____

[13] _____

[14] _____

[15] _____

[16] _____

[17] _____

[18] _____

[19] _____

[20] _____

[21] _____

[22] _____

[23] _____

[24] _____

[25] _____

[26] _____

[27] _____

[28] _____

[29] _____

[30] _____

[31] _____

1. Find the limit: $\lim_{x \rightarrow 2} \frac{1}{(x-2)^2}$.

- [A] $-\infty$ [B] 0 [C] $\frac{1}{4}$ [D] ∞ [E] None of these

2. Find the limit: $\lim_{x \rightarrow 0} \left(2 + \frac{5}{x^2} \right)$.

- [A] 7 [B] ∞ [C] $-\infty$ [D] 2 [E] None of these

3. Find the limit: $\lim_{x \rightarrow 2^-} \frac{1}{x-2}$.

- [A] $-\infty$ [B] 0 [C] ∞ [D] $-\frac{1}{4}$ [E] None of these

4. Find the limit: $\lim_{x \rightarrow 0^+} \frac{1}{x}$.

- [A] $+\infty$ [B] The limit does not exist. [C] 0 [D] $-\infty$ [E] None of these

5. Find the limit: $\lim_{x \rightarrow 1} \frac{5}{(x-1)^2}$.

- [A] $\frac{5}{4}$ [B] $+\infty$ [C] $-\infty$ [D] 0 [E] None of these

6. Find the limit: $\lim_{x \rightarrow 1} \left(2 - \frac{5}{(x-1)^2} \right)$.

- [A] -3 [B] 2 [C] $-\infty$ [D] $+\infty$ [E] None of these

7. Find the limit: $\lim_{x \rightarrow -1^-} \frac{1}{x+1}$.

8. Find the limit: $\lim_{x \rightarrow 3} \frac{3}{x^2 - 6x + 9}$.

9. Find the limit: $\lim_{x \rightarrow 0} \left(3x + 2 + \frac{1}{x^2} \right)$.

10. Find the limit: $\lim_{x \rightarrow 3^-} \frac{1}{x-3}$.

11. Find the limit: $\lim_{x \rightarrow \pi/2^+} \tan x$.

12. Find the limit: $\lim_{x \rightarrow 1^+} \frac{x^2 - x - 2}{x - 1}$.

13. Find the limit: $\lim_{x \rightarrow 3^-} \frac{x^2 - 3x + 2}{x^2 - 5x + 6}$.

[A] $\frac{1}{3}$ [B] 1 [C] $+\infty$ [D] $-\infty$ [E] None of these

14. Find the limit: $\lim_{x \rightarrow 4^+} \frac{x^2 - x}{(x-4)^2}$.

[A] $-\infty$ [B] 0 [C] 4 [D] $+\infty$ [E] None of these

15. Find the limit: $\lim_{x \rightarrow 1^-} \frac{-2}{x-1}$.

[A] 0 [B] $-\infty$ [C] ∞ [D] The limit does not exist. [E] None of these

16. Find the limit: $\lim_{x \rightarrow 1} \frac{-2}{(1-x)^2}$.

17. Find all vertical asymptotes of the graph of $f(x) = \frac{x-3}{x+2}$.

[A] $x = 3$ [B] $x = 1$ [C] $x = -2, x = 3$ [D] $x = -2$ [E] None of these

18. Find all vertical asymptotes of the graph of $g(x) = \frac{x+1}{x^2-1}$.
[A] $x = -1$ [B] $x = -1, x = 1$ [C] $y = 1$ [D] $x = 1$ [E] None of these
19. Find all vertical asymptotes of the graph of $f(x) = \frac{2x-1}{x+3}$.
[A] $x = -3$ [B] $x = \frac{1}{2}, x = -3$ [C] $x = \frac{1}{2}$ [D] $x = 2$ [E] None of these
20. Find all vertical asymptotes of the graph of $f(x) = \frac{x-2}{x^2-4}$.
[A] $x = -2, x = 2$ [B] $x = -2$ [C] $x = 0$ [D] $x = 2$ [E] None of these
21. Find the vertical asymptote: $f(x) = \frac{7}{x+2}$.
[A] $y = 0$ [B] $(0, -2)$ [C] $x = -2$ [D] $x = 2$ [E] None of these
22. Find the vertical asymptote(s): $f(x) = \frac{x-2}{x^2-3x-10}$.
[A] $y = 0$ [B] $y = 1, y = 0$ [C] $x = -2, x = 5$ [D] $y = 1$ [E] None of these
23. Find all vertical asymptotes of the graph of $f(x) = \frac{x^2+3x-1}{x+7}$.
24. Find all vertical asymptotes of the graph of $f(x) = \frac{2x-2}{(x-1)(x^2+x-1)}$.
25. Find the vertical asymptote(s) of $f(x) = \frac{x^2-x-2}{x^2+x-6}$.
26. Use a graphing utility to find the vertical asymptote(s) (if any) for $f(x) = \frac{\cot x}{x}$.

27. Use a graphing utility to find the vertical asymptote(s) (if any) for $f(x) = \frac{x^2 + 4}{x^2 - 4}$.

28. $f(x)$ decreases without bound as x approaches what value from the right?

$$f(x) = \frac{7}{(x-1)(7-x)}$$

[A] 7 [B] 1 [C] -1 [D] -7 [E] None of these

29. $f(x)$ decreases without bound as x approaches what value from the right?

$$f(x) = \frac{4}{(x-3)(5-x)}$$

[A] 3 [B] -5 [C] 5 [D] -3 [E] None of these

30. $f(x)$ decreases without bound as x approaches what value from the right?

$$f(x) = \frac{9}{(x-4)(9-x)}$$

[A] 9 [B] 4 [C] -9 [D] -4 [E] None of these

31. $f(x)$ decreases without bound as x approaches what value from the right?

$$f(x) = \frac{6}{(x-2)(7-x)}$$

[A] -7 [B] -2 [C] 2 [D] 7 [E] None of these