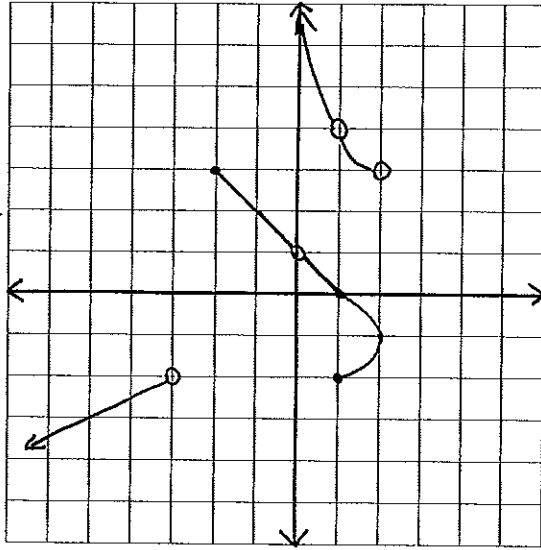


AP Calc AB  
Limits Review

1. Given the graph of a function, find the requested values.



|                                    |                                  |           |
|------------------------------------|----------------------------------|-----------|
| $\lim_{x \rightarrow -2^-} f(x) =$ | $\lim_{x \rightarrow -2} f(x) =$ | $f(-2) =$ |
| $\lim_{x \rightarrow -2^+} f(x) =$ | $\lim_{x \rightarrow -2} f(x) =$ | $f(3) =$  |
| $\lim_{x \rightarrow 0^-} f(x) =$  | $\lim_{x \rightarrow 0} f(x) =$  | $f(2) =$  |
| $\lim_{x \rightarrow 0^+} f(x) =$  | $\lim_{x \rightarrow 0} f(x) =$  | $f(1) =$  |
| $\lim_{x \rightarrow 2^-} f(x) =$  | $\lim_{x \rightarrow 2} f(x) =$  | $f(4) =$  |
| $\lim_{x \rightarrow 2^+} f(x) =$  | $\lim_{x \rightarrow 2} f(x) =$  | $f(-3) =$ |
| $\lim_{x \rightarrow 0} f(x) =$    | $\lim_{x \rightarrow 0} f(x) =$  |           |

Find each limit:

1.  $\lim_{x \rightarrow -2} (3x^2 - 4)$

2.  $\lim_{x \rightarrow 5} \left( \frac{-2}{x^2 - 9} \right)$

3.  $\lim_{x \rightarrow -1} \left( \frac{x^2 - 4x - 5}{x^2 - 1} \right)$

4.  $\lim_{x \rightarrow 0} \left( \frac{5 - \sqrt{x}}{x - 9} \right)$

5.  $\lim_{x \rightarrow 3} \left( \frac{x^2 + 7x - 18}{x^2 + 10x + 9} \right)$

6.  $\lim_{x \rightarrow 5} (e)$

7.  $\lim_{\theta \rightarrow \pi} (\sin \theta)$

8.  $\lim_{x \rightarrow -6} \left( \frac{3x^2 - 5x + 2}{x^2 - 9} \right)$

9.  $\lim_{x \rightarrow -2} \left( \frac{x^2 - 3x - 15}{x + 2} \right)$

10.  $\lim_{\theta \rightarrow \frac{\pi}{2}} \left( \frac{-2x + 5}{x^2 + 10x} \right)$

11.  $\lim_{\theta \rightarrow \frac{\pi}{3}} (\sec \theta)$

12.  $\lim_{x \rightarrow 4} \left( \frac{-2x^2 + 5x - 3}{x - 4} \right)$

13.  $\lim_{\theta \rightarrow \frac{\pi}{2}} (\tan \theta)$

14.  $\lim_{x \rightarrow 0} \left( \frac{\sqrt{x^4 - 3x}}{3x^2 + 2} \right)$

15.  $\lim_{x \rightarrow 0} (\sin x)$

16.  $\lim_{x \rightarrow 0} \left( \frac{\tan x \cos x}{x} \right)$

17.  $\lim_{x \rightarrow 0} \left( \frac{\sqrt{x^2 + 3x}}{x^2 - 5} \right)$

18.  $\lim_{x \rightarrow -3} \left( \frac{-x^2 + 5x}{x^2 - 6x + 9} \right)$

19.  $\lim_{x \rightarrow -1} \left( \frac{-x^2 + 5x}{x^2 - 6x + 9} \right)$

20.  $\lim_{x \rightarrow 0} \left( \frac{x^2 + 4x - 12}{x^2 - 36} \right)$

21.  $\lim_{x \rightarrow -6} \left( \frac{x^2 + 4x - 12}{x^2 - 36} \right)$

22.  $\lim_{x \rightarrow 6} \left( \frac{x^2 + 4x - 12}{x^2 - 36} \right)$

23.  $\lim_{x \rightarrow 0} \left( \frac{\sqrt{2x^2 + 5x}}{3x - 4} \right)$

24.  $\lim_{x \rightarrow 0} \sqrt{x + 3}$

25.  $\lim_{x \rightarrow 0} \sqrt{x + 3}$

26.  $\lim_{x \rightarrow 1} \left( \frac{x^3 - 1}{x^2 - 1} \right)$

27.  $\lim_{x \rightarrow -3} \sqrt{x + 3}$

Find the indicated limit:

$$h(x) = \begin{cases} 2x - 3 & x < -3 \\ x^2 - 1 & -3 \leq x < 2 \\ \sqrt{x - 1} & x \geq 2 \end{cases}$$

1.  $\lim_{x \rightarrow -3^+} h(x)$

2.  $\lim_{x \rightarrow -3^-} h(x)$

3.  $\lim_{x \rightarrow -3} h(x)$

4.  $h(-3) =$

5.  $\lim_{x \rightarrow 2^+} h(x)$

6.  $\lim_{x \rightarrow 2^-} h(x)$

7.  $\lim_{x \rightarrow 2} h(x)$

8.  $h(2) =$

9.  $\lim_{x \rightarrow \infty} h(x)$

10.  $\lim_{x \rightarrow -\infty} h(x)$

$$g(x) = \begin{cases} |x| + 1 & x < -1 \\ x^2 - 3 & -1 \leq x \leq 2 \\ \frac{3}{2}x - 2 & x > 2 \end{cases}$$

1.  $\lim_{x \rightarrow -1^+} h(x)$

2.  $\lim_{x \rightarrow -1^-} h(x)$

3.  $\lim_{x \rightarrow -1} h(x)$

4.  $h(-1) =$

5.  $\lim_{x \rightarrow 2^+} h(x)$

6.  $\lim_{x \rightarrow 2^-} h(x)$

7.  $\lim_{x \rightarrow 2} h(x)$

8.  $h(2) =$

9.  $\lim_{x \rightarrow \infty} h(x)$

10.  $\lim_{x \rightarrow -\infty} h(x)$