

Limits

Evaluate the following limits.

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

2. $\lim_{h \rightarrow 0} \left[\frac{(3+h)^{-1} - 3^{-1}}{h} \right]$

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

4. $\lim_{h \rightarrow 0} \left[\frac{(x+h)^3 - x^3}{h} \right]$

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

6. $\lim_{x \rightarrow -2} \left(\frac{2 - |x|}{2+x} \right)$

7. $\lim_{x \rightarrow 0^+} \left(\frac{1}{x} - \frac{1}{|x|} \right)$

8. $\lim_{x \rightarrow 0^-} \left(\frac{2}{x} \right)$

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