

## Limits

1.  $\lim_{x \rightarrow 4} \frac{x^2 - 16}{x^3 - 64}$

2.  $\lim_{x \rightarrow \infty} (\sqrt{x^2 - 3x + 1} - \sqrt{x^2 + 3x + 1})$

3.  $\lim_{x \rightarrow 2} \frac{\frac{1}{x} - \frac{1}{2}}{x - 2}$

4.  $\lim_{x \rightarrow 0^-} \frac{2}{x}$

5.  $\lim_{x \rightarrow 3} \frac{|3x - 9|}{x - 3}$

6.  $\lim_{x \rightarrow 0^+} \frac{x - \sqrt{x}}{\sqrt{x}}$

7.  $\lim_{x \rightarrow \infty} \sqrt{4x^2 + 1} - 2x$

8.  $\lim_{x \rightarrow -\infty} \frac{x^2 - x + 1}{3x^3 + 17}$

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

10.  $\lim_{x \rightarrow 0} x^2 \sin \frac{1}{x}$

11.  $\lim_{x \rightarrow 0} \frac{\sin x - \tan x}{x^3}$

12.  $\lim_{x \rightarrow 2^-} \frac{\lceil x + 1 \rceil - x}{|x - 2|}$

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

14.  $\lim_{x \rightarrow 0} \frac{x^4 + 5x - 3}{2 - \sqrt{x^2 + 4}}$

15.  $\lim_{x \rightarrow 6^-} \frac{x + 3}{(x - 8)(x - 6)}$

16.  $\lim_{x \rightarrow \infty} \frac{2x^5 + 3x^3 - 4\sqrt{x}}{7 + 6x^2 - 5x^5}$

17.  $\lim_{x \rightarrow 8^+} (\sqrt{x - 8} + \lceil x + 1 \rceil)$

18.  $\lim_{x \rightarrow -\infty} \frac{x - 9}{\sqrt{4x^2 + 3x + 2}}$