

Problem 1

Find $\lim_{x \rightarrow -2} \frac{x^2 - 4}{|x| - 2}$

Problem 2

Find $\lim_{x \rightarrow 1} \frac{x^3 - 1}{x - 1}$

Problem 3

Find $\lim_{x \rightarrow 0} |x| \cos\left(\frac{1}{x}\right)$ by using the sandwich theorem.

Problem 4

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

Problem 5

Find $\lim_{x \rightarrow 1^+} \frac{\sqrt{2x}(x-1)}{|x-1|}$ and $\lim_{x \rightarrow 1^-} \frac{\sqrt{2x}(x-1)}{|x-1|}$

Problem 6

Find $\lim_{x \rightarrow 0} \frac{\sin(6x)}{7x}$

Problem 7

Find $\lim_{x \rightarrow 0} \frac{\sin(4x)}{\sin(3x)}$

Problem 8

Find $\lim_{x \rightarrow \infty} \frac{3x^3 + x^2 + x + 3}{2x^3 - 3x^2 - 1}$

Problem 9

Find $\lim_{x \rightarrow \infty} \frac{2\sqrt{x} + \sqrt[3]{x}}{\sqrt[4]{x} + 3\sqrt{x}}$