

1. Compute  $\lim_{x \rightarrow 0} \frac{\cos^4 x}{5 + x^3}$
2. Compute  $\lim_{x \rightarrow 5} \frac{x^2 - 6x + 5}{x - 5}$
3. Compute  $\lim_{x \rightarrow 3} \frac{2x - 6}{|x - 3|}$
4. Compute  $\lim_{x \rightarrow 0} \frac{\cos x - 1}{\sin x}$
5. Compute  $\lim_{x \rightarrow 0} x^5 \cos \frac{3}{x}$
6. If  $f(x) = \begin{cases} x^3 + 1, & x \geq 2 \\ x - 1, & x < 2 \end{cases}$ , compute  $\lim_{x \rightarrow 2} f(x)$
7. If  $f(x) = \begin{cases} \sin x, & x \geq 0 \\ \frac{\sin x}{x} - 1, & x < 0 \end{cases}$ , compute  $\lim_{x \rightarrow 0} f(x)$
8. If  $f(x) = \begin{cases} x^2, & x \neq 0 \\ 1, & x = 0 \end{cases}$ , compute  $\lim_{x \rightarrow 0} f(x)$