

Let's find the following limits:

a) $\lim_{x \rightarrow 0} f(x)$, where $f(x) = \begin{cases} 0, & \text{if } x \neq 0 \\ 1, & \text{if } x = 0 \end{cases}$

b) $\lim_{x \rightarrow 0} f(x)$, where $f(x) = \begin{cases} 0, & \text{if } x \neq 0 \\ -1, & \text{if } x = 0 \end{cases}$

c) $\lim_{x \rightarrow 2} f(x)$, where $f(x) = \begin{cases} x^2 - x + 5, & \text{if } x \neq 2 \\ -154897345748357, & \text{if } x = 2 \end{cases}$

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

e) $\lim_{x \rightarrow 4} \frac{x - 4}{\sqrt{x - 1} - \sqrt{3}}$

f) $\lim_{x \rightarrow 0} x \cos \left(\frac{e^x \sin x + \frac{1}{x}}{x^{19} + 14x^8 - 120} \right)$

g) $\lim_{x \rightarrow 0} \frac{\sin 2x}{\sin x}$

h) $\lim_{x \rightarrow 0} \frac{\sin(\sin x)}{x}$