

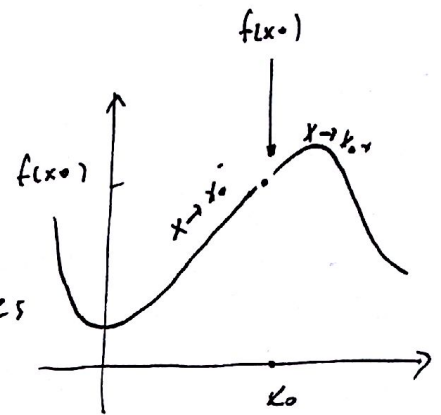
Averigua si estas funciones son continuas en $x = 2$

$$f(x) = \begin{cases} 3x - 2 & \text{si } x < 2 \\ 6 - x & \text{si } x \geq 2 \end{cases}$$

$$g(x) = \begin{cases} x^2 - 1 & \text{si } x \leq 2 \\ 2x + 1 & \text{si } x > 2 \end{cases}$$

Para que $f(x)$ sea continua en $x = x_0$

- $f(x_0)$ existe
- los límites laterales coinciden
- $f(x_0)$ sea igual que los límites laterales

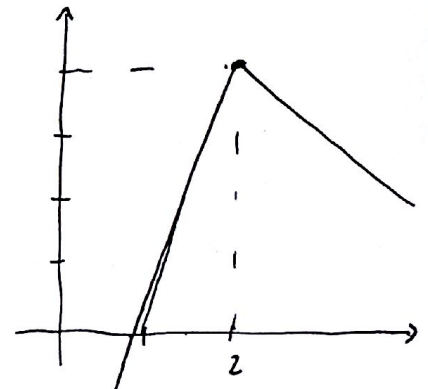


a) $f(x) = \begin{cases} 3x - 2 & x < 2 \\ 6 - x & x \geq 2 \end{cases}$

$$f(2) = 6 - 2 = 4$$

$$\lim_{x \rightarrow 2^-} f(x) = \lim_{x \rightarrow 2^-} 3x - 2 = 3 \cdot 2 - 2 = 4$$

$$\lim_{x \rightarrow 2^+} f(x) = \lim_{x \rightarrow 2^+} 6 - x = 6 - 2 = 4$$



b) $f(x) = \begin{cases} x^2 - 1 & x \leq 2 \\ 2x + 1 & x > 2 \end{cases}$

$$f(2) = 2^2 - 1 = 3$$

$$\lim_{x \rightarrow 2^-} f(x) = \lim_{x \rightarrow 2^-} x^2 - 1 = 2^2 - 1 = 3$$

$$\lim_{x \rightarrow 2^+} f(x) = \lim_{x \rightarrow 2^+} 2x + 1 = 2 \cdot 2 + 1 = 5$$

