

LÍMITES

1. Calcula los siguientes límites de funciones hacia un punto. Las indeterminaciones son:

$$\infty - \infty; 0 \cdot \infty; \frac{0}{0}; \frac{\infty}{\infty}; 0^0; 1^\infty; \infty^0$$

$$\circ \lim_{x \rightarrow -1} \frac{x^2 + 1}{x + 1}$$

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

$$\circ \lim_{x \rightarrow 1} \frac{x^3 - x^2 - x + 1}{2x^3 - 5x^2 + 4x - 1}$$

$$\circ \lim_{x \rightarrow -2} \frac{x^2 + 2x}{x^2 + 3x + 2}$$

$$\circ \lim_{x \rightarrow 1} \frac{x^2 - 1}{x^2 - 2x + 1}$$

$$\circ \lim_{x \rightarrow 0} \frac{x^3}{x^5 + x^4}$$

$$\circ \lim_{x \rightarrow -1} \frac{\sqrt{x+2} - \sqrt{2x+3}}{x+1}$$

$$\circ \lim_{x \rightarrow 2} \frac{x^2 - 2x}{\sqrt{4x+1} - 3\sqrt{x-1}}$$

$$\circ \lim_{x \rightarrow -1} \frac{\sqrt{3-x} - 2}{x+1}$$

$$\circ \lim_{x \rightarrow 0} \frac{2x}{1 - \sqrt{1-x}}$$

$$\circ \lim_{x \rightarrow 2} \left(\frac{x}{x-2} - \frac{3x}{(x+1)(x-2)} \right)$$

$$\circ \lim_{x \rightarrow -2} \left(\frac{x+1}{x^2+2x} - \frac{x}{x^2-4} \right)$$

$$\circ \lim_{x \rightarrow 1} \left(\frac{1}{x(x-1)} - \frac{x}{x-1} \right)$$

$$\circ \lim_{x \rightarrow -1} \left(\frac{x}{2x+1} \right)^{\frac{1}{x+1}}$$

$$\circ \lim_{x \rightarrow 0} \left(\frac{x+1}{x^2+1} \right)^{\frac{1}{x}}$$

2. Calcula los siguientes límites en el infinito.

$$\circ \lim_{x \rightarrow \infty} (2x^2 - 3x + 10)$$

$$\circ \lim_{x \rightarrow \infty} (-3x^3 + x^2 - x - 6)$$

$$\circ \lim_{x \rightarrow \infty} 3^{-x}$$

$$\circ \lim_{x \rightarrow -\infty} \left(\frac{x^2 - 3}{1 - 2x^2} \right)$$

$$\circ \lim_{x \rightarrow +\infty} \frac{\sqrt{3x^4 - 3x + 1}}{1 - x^2}$$

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

$$\circ \lim_{x \rightarrow +\infty} \frac{x + \sqrt{x^3 + 1}}{x^2 + 1}$$

$$\circ \lim_{x \rightarrow +\infty} \frac{3^x}{x^5 + 1}$$

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

$$\circ \lim_{x \rightarrow +\infty} \frac{2^x}{3^x}$$

$$\circ \lim_{x \rightarrow +\infty} \frac{x^2 + 1}{\log_5(x + 3)}$$

$$\circ \lim_{x \rightarrow +\infty} \frac{10^x}{6^x}$$

$$\circ \lim_{x \rightarrow +\infty} \frac{\log(x^2 - 4)}{x^3 + 2x - 3}$$

$$\circ \lim_{x \rightarrow +\infty} \frac{\log_2 x}{2^{x-1} + x^3}$$

$$\circ \lim_{x \rightarrow +\infty} \left(\frac{2x^2}{x+1} - \frac{2x^3+1}{x^2} \right)$$

$$\circ \lim_{x \rightarrow +\infty} \left(\frac{3x^2}{x-1} - \frac{x^2}{x+1} \right)$$

$$\circ \lim_{x \rightarrow +\infty} \left(\frac{x^2+1}{x} - \frac{x^2+x-1}{x+1} \right)$$

$$\circ \lim_{x \rightarrow +\infty} x - \sqrt{x^2 + 1}$$

$$\circ \lim_{x \rightarrow +\infty} x + 1 - \sqrt{x+1}$$

$$\circ \lim_{x \rightarrow +\infty} \sqrt{x^2 + 1} - x + 1$$

$$\circ \lim_{x \rightarrow +\infty} x + 1 - \sqrt{x+1}$$

$$\circ \lim_{x \rightarrow +\infty} \left(\frac{x}{2x+1} \right)^x$$

$$\circ \lim_{x \rightarrow +\infty} \left(\frac{x^2}{x+1} \right)^x$$

$$\circ \lim_{x \rightarrow +\infty} \left(\frac{x}{x^2+1} \right)^x$$

$$\circ \lim_{x \rightarrow +\infty} \left(1 + \frac{1}{2x} \right)^x$$

$$\circ \lim_{x \rightarrow +\infty} \left(1 + \frac{1}{x} \right)^{2x}$$

$$\circ \lim_{x \rightarrow +\infty} \left(\frac{x^2 + x}{x^2 + 1} \right)^{2x+1}$$

$$\circ \lim_{x \rightarrow +\infty} \left(\frac{x^2 + x + 1}{x^2 - x + 1} \right)^x$$