

Comprueba los siguientes límites:

$$\lim_{x \rightarrow \infty} \frac{x^3}{e^x} = 0$$

$$\lim_{x \rightarrow 0} \frac{1}{x} - \frac{1}{\ln(x+1)} = -\frac{1}{2}$$

$$\lim_{x \rightarrow 0} \frac{e^x - 1}{x} = 1$$

$$\lim_{x \rightarrow 0} \operatorname{cosec} x - \frac{1}{x} = 0$$

$$\lim_{x \rightarrow \pi/2} \frac{\operatorname{tg} x - 3}{\operatorname{sec} x + 1} = 1$$

$$\lim_{x \rightarrow 0} \frac{e^x - e^{\operatorname{sen} x}}{x^3} = \frac{1}{6}$$

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

$$\lim_{x \rightarrow \pi/2} \frac{\operatorname{tg} 3x}{\operatorname{tg} 5x} = \frac{5}{3}$$

$$\lim_{x \rightarrow 0} (\operatorname{sen} x)^x = 1$$

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

$$\lim_{x \rightarrow 0^+} [x (\ln x)^n] = 0$$

$$\lim_{x \rightarrow 0} (\operatorname{sen} x + \operatorname{cos} x)^{\operatorname{cotg} x} = e$$

$$\lim_{x \rightarrow \infty} \frac{\ln x}{\sqrt{x}} = 0$$

$$\lim_{x \rightarrow \infty} \frac{\ln x}{x} = 0$$

$$\lim_{x \rightarrow 0} x^x = 1 \quad \lim_{x \rightarrow 0} \left(\frac{1}{x} \right)^{\operatorname{tg} x} = 1$$

$$\lim_{x \rightarrow 1} \left(\frac{x}{x-1} - \frac{1}{\ln x} \right) = \frac{1}{2}$$

$$\lim_{x \rightarrow \pi/4} \operatorname{tg} x^{\frac{1}{\operatorname{cos} 2x}} = \frac{1}{e}$$

$$\lim_{x \rightarrow \infty} (x^2 + 1)^{\frac{1}{x}} = 1$$

$$\lim_{x \rightarrow 0} \frac{x \operatorname{cos} x - \operatorname{sen} x}{x^3} = -\frac{1}{3}$$

$$\lim_{x \rightarrow \infty} \left(1 + \frac{5}{x} \right)^{7x} = e^{35}$$

$$\lim_{x \rightarrow \infty} (\ln x)^{\frac{1}{x^2}} = 1$$

$$\lim_{x \rightarrow 1^+} (x^2 - 1) \operatorname{tg} \left(\frac{\pi}{2} x \right) = -\frac{4}{\pi}$$

$$\lim_{x \rightarrow 0} \frac{\ln x}{\operatorname{cotg} x} = 0$$

$$\lim_{x \rightarrow 0} \frac{1 - \operatorname{cos} x}{3x^2} = \frac{1}{6}$$

$$\lim_{x \rightarrow 1} \frac{\operatorname{sen}(x-1)}{x^2 - 3x + 2} = -1$$

$$\lim_{x \rightarrow 3} \left(\frac{2}{x-3} - \frac{12}{x^2-9} \right) = \frac{1}{3}$$

$$\lim_{x \rightarrow \pi/2} (\operatorname{sen} x)^{\operatorname{tg} x} = 1$$

$$\lim_{x \rightarrow \frac{\pi}{2}} (1 + 2 \operatorname{cos} x)^{\frac{1}{\operatorname{cos} x}} = e^2$$

$$\lim_{x \rightarrow 0} \frac{e^x - e^{-x} - 2x}{x - \operatorname{sen} x} = 2$$

$$\lim_{x \rightarrow 0^+} (\operatorname{tg} x \cdot \ln x) = 0$$

$$\lim_{x \rightarrow 0} \left(\frac{1}{x} - \frac{1}{\operatorname{sen} x} \right) = 0$$

$$\lim_{x \rightarrow \infty} \frac{\ln^4 x}{x^2} + 1 = 1$$

$$\lim_{x \rightarrow \infty} \left(x \ln \frac{1+x}{x} \right) = 1$$

$$\lim_{x \rightarrow 0} \frac{1 - \operatorname{cos} x}{(e^x - 1)^2} = \frac{1}{2}$$

$$\lim_{x \rightarrow \infty} x \left(5^{\frac{1}{x}} - 1 \right) = \ln 5$$

$$\lim_{x \rightarrow 1} x^{\frac{1}{1-x}} = \frac{1}{e}$$

$$\lim_{x \rightarrow \pi/2} \operatorname{cos} x \ln(\operatorname{tg} x) = 0$$

$$\lim_{x \rightarrow 0^+} x^2 \ln x = 0$$

$$\lim_{x \rightarrow \infty} \frac{3^x}{x^3} = \infty$$

$$\lim_{x \rightarrow \infty} (\ln x)^{\frac{1}{x}} = 1$$

$$\lim_{x \rightarrow 1^+} (x-1) \ln(x-1) = 0$$

$$\lim_{x \rightarrow 0} \frac{\operatorname{cos} x - 2x^2 - 1}{3x^2} = -\frac{5}{6}$$

$$\lim_{x \rightarrow 0} \frac{x - \operatorname{sen} x}{\operatorname{tg} x - \operatorname{sen} x} = \frac{1}{3}$$

$$\lim_{x \rightarrow 0} \frac{x^3 \operatorname{sen} x}{(1 - \cos x)^2} = 4$$

$$\lim_{x \rightarrow 0} \ln x \operatorname{tg} x = 0$$

$$\lim_{x \rightarrow 0} \left(\frac{1}{\operatorname{sen}^2 x} - \frac{1}{x^2} \right) = \frac{1}{3}$$

$$\lim_{x \rightarrow 0} \frac{\operatorname{tg} x - \operatorname{sen} x}{x^3} = \frac{1}{2}$$

$$\lim_{x \rightarrow 0} \frac{1 - \cos^2 x}{(\operatorname{sen} x + \operatorname{tg} x)^2} = \frac{1}{4}$$

$$\lim_{x \rightarrow 0} \frac{\operatorname{arctg} x - x}{x - \operatorname{sen} x} = -2$$

$$\lim_{x \rightarrow 0} \frac{\operatorname{tg} x - x}{x - \operatorname{sen} x} = -1$$

$$\lim_{x \rightarrow 0} (1 - \cos x)^{\operatorname{tg} x} = 1$$

$$\lim_{x \rightarrow 0} x \cdot \ln x = 0$$

$$\lim_{x \rightarrow 0} \left(\frac{1}{x} - \frac{1}{e^x - 1} \right) = \frac{1}{2}$$

$$\lim_{x \rightarrow 1} \frac{2x - 2}{(26 + x)^{1/3} - 3} = 54$$

$$\lim_{x \rightarrow 0} x^{\operatorname{sen} x} = 1$$

$$\lim_{x \rightarrow \frac{p}{2}} \left(\operatorname{tg} \frac{x}{2} \right)^{\frac{1}{x - p/2}} = 1$$

$$\lim_{x \rightarrow \frac{p}{2}} (1 - \cos x)^{\operatorname{tg} x} = \frac{1}{e}$$

$$\lim_{x \rightarrow 0} \frac{x}{x + \operatorname{sen} x} = \frac{1}{2}$$

$$\lim_{x \rightarrow 0} \frac{\operatorname{sen} x}{\operatorname{tg} x} = 1$$

$$\lim_{x \rightarrow \infty} \frac{\ln x}{\sqrt[3]{x}} = 0$$

$$\lim_{x \rightarrow \infty} x \operatorname{sen} \frac{a}{x} = a$$

$$\lim_{x \rightarrow 0} (\cos x)^{\operatorname{cotg}^2 x} = e^{-\frac{1}{2}}$$

$$\lim_{x \rightarrow 0} \frac{x - \operatorname{sen} 2x}{x + \operatorname{sen} 3x} = -\frac{1}{4}$$

$$\lim_{x \rightarrow 0} \frac{\operatorname{arctg} x - x - \frac{x^3}{3}}{x^3} = -\frac{2}{3}$$

$$\lim_{x \rightarrow 0} \left(\frac{a^x + b^x}{2} \right)^{\frac{1}{x}} = a \cdot b$$

$$\lim_{x \rightarrow 0^+} \frac{\ln x}{\operatorname{cosec} x} = 0$$

$$\lim_{x \rightarrow 1} \left(\frac{1}{\ln x} - \frac{1}{x - 1} \right) = \frac{1}{2}$$

$$\lim_{x \rightarrow -1} \frac{x + 1}{\sqrt{6x^2 + 3} + 3x} = 1$$

$$\lim_{x \rightarrow -1} \frac{1 + x^{1/3}}{1 + x^{1/5}} = \frac{5}{3}$$

$$\lim_{x \rightarrow 1} (1 - x) \operatorname{tg} \frac{px}{2} = \frac{2}{p}$$

$$\lim_{x \rightarrow 0} x \cdot \operatorname{sen} \frac{1}{x} = 0$$

$$\lim_{x \rightarrow 0} (1 + x)^{\frac{1}{x}} = e$$

$$\lim_{x \rightarrow 0} \left(\frac{1}{x} - \frac{1}{\ln(x + 1)} \right) = -\frac{1}{2}$$

$$\lim_{x \rightarrow 1} \left(\operatorname{tg} \left(\frac{p}{4} x \right) \right)^{\operatorname{tg} \left(\frac{p}{2} x \right)} = \frac{1}{e}$$

$$\lim_{x \rightarrow \infty} x^{\operatorname{sen} \frac{1}{x}} = 1$$

$$\lim_{x \rightarrow \infty} x \ln \left(\frac{x - a}{x + a} \right) = -2a$$

$$\lim_{x \rightarrow 0} \frac{(2 - x)e^x - (2 + x)}{x^2} = 0$$

$$\lim_{x \rightarrow \infty} (x + e^x + e^{2x})^{\frac{1}{x}} = e^2$$

$$\lim_{x \rightarrow 0} (1 + \operatorname{sen} x)^{\operatorname{cosec}(x/2)} = e^2$$

$$\lim_{x \rightarrow \infty} (1 - e^{-x})^x = \frac{1}{e}$$

$$\lim_{x \rightarrow 0} \frac{x - \operatorname{sen} 2x}{x + \operatorname{sen} 4x} = -\frac{1}{5}$$

$$\lim_{x \rightarrow 0} (1 - \operatorname{sen} 2x)^{\operatorname{cotg} x} = 1$$

$$\lim_{x \rightarrow 0} (1 - \cos x)^{2x} = 1$$

$$\lim_{x \rightarrow p} (x - p) \operatorname{tg} \left(\frac{x}{2} \right) = -2$$

$$\lim_{x \rightarrow 0} (\operatorname{cotg} x)^x = 1$$

$$\lim_{x \rightarrow 0} (\operatorname{sen} x)^{\operatorname{tg} x} = 1$$

$$\lim_{x \rightarrow p} \frac{\operatorname{tg} x - x}{x - \operatorname{sen} x} = 0$$

$$\lim_{x \rightarrow 0} \frac{x - \operatorname{sen} x}{x^3} = \frac{1}{6}$$