05843

LIMITES

Comprueba los siguientes límites:

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

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

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

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

$$\lim_{x\to \pi/2} \frac{tgx - 3}{secx + 1} = 1$$

$$\lim_{x\to 0} \frac{e^x - e^{senx}}{x^3} = \frac{1}{6}$$

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

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

$$\lim_{x\to 0} (senx)^x = 1$$

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

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

$$\lim_{x\to 0} (senx + cosx)^{cotgx} = e$$

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

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

$$\lim_{x\to 0} x^x = 17 \qquad \lim_{x\to 0} \left(\frac{1}{x}\right)^{tgx} = 1$$

$$\lim_{x\to 1} \left(\frac{x}{x - 1} - \frac{1}{lnx}\right) = \frac{1}{2}$$

$$\lim_{x\to \pi/4} tgx^{\frac{1}{\cos 2x}} = \frac{1}{e}$$

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

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

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

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

$$\lim_{x\to 1^+} (x^2 - 1)\ tg(\frac{\pi}{2}x) = \frac{-4}{\pi}$$

$$\lim_{x\to 0} \frac{\ln\ x}{cotg\ x} = 0$$

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

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

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

$$\lim_{x\to \pi/2} (senx)^{tgx} = 1$$

$$\lim_{x\to \frac{\pi}{2}} (1 + 2\ cosx)^{\frac{1}{cosx}} = e^2$$

$$\lim_{x\to 0} \frac{e^x - e^{-x} - 2x}{x - senx} = 2$$

$$\lim_{x\to 0^+} (tg\,x\ .\ \ln\ x) = 0$$

$$\lim_{x\to 0} \left(\frac{1}{x} - \frac{1}{senx}\right) = 0$$

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

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

$$\lim_{x\to 0} \frac{1 - cosx}{(e^x - 1)^2} = \frac{1}{2}$$

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

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

$$\lim_{x\to \pi/2} cosx\ \ln(tgx) = 0$$

$$\lim_{x\to 0^+} x^2\ lnx = 0$$

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

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

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

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

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$$\lim_{x \to 0} \frac{x - sen\, x}{tg\, x - sen\, x} = \frac{1}{3}$$

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

$$\lim_{x \to 0} \ln x\ tg\, x = 0$$

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

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

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

$$\lim_{x \to 0} \frac{arcotg\, x - x}{x - sen\, x} = -2$$

$$\lim_{x \to 0} \frac{tg\, x - x}{x - sen\, x} = -1$$

$$\lim_{x \to 0} (1 - \cos x)^{tg\, x} = 1$$

$$\lim_{x \to 0} x \,.\, \ln x = 0$$

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

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

$$\lim_{x \to 0} x^{sen\, x} = 1$$

$$\lim_{x \to \frac{\pi}{2}} \left(tg\ \frac{x}{2} \right)^{\frac{1}{x - \pi/2}} = 1$$

$$\lim_{x \to \frac{\pi}{2}} (1 - \cos x)^{tg\, x} = \frac{1}{e}$$

$$\lim_{x \to 0} \frac{x}{x + sen\, x} = \frac{1}{2}$$

$$\lim_{x \to 0} \frac{sen\, x}{tg\, x} = 1$$

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

$$\lim_{x \to \infty} x\ sen\, \frac{a}{x} = a$$

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

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

$$\lim_{x \to 0} \frac{arcotg\, x - x - \frac{x^3}{3}}{x^3} = -\frac{2}{3}$$

$$\lim_{x \to 0} \left(\frac{a^x + b^x}{2} \right)^{\frac{1}{x}} = a \,.\, b$$

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

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

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

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

$$\lim_{x \to 1} (1 - x)\ tg\, \frac{\pi x}{2} = \frac{2}{\pi}$$

$$\lim_{x \to 0} x \,.\, sen \frac{1}{x} = 0$$

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

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

$$\lim_{x \to 1} \left(tg\left(\frac{\pi}{4} x \right) \right)^{tg\left(\frac{\pi}{2} x \right)} = \frac{1}{e}$$

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

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

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

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

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

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

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

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

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

$$\lim_{x \to \pi} (x - \pi)\ tg\left(\frac{x}{2} \right) = -2$$

$$\lim_{x \to 0} (cotg\, x)^x = 1$$

$$\lim_{x \to 0} (sen\, x)^{tg\, x} = 1$$

$$\lim_{x \to \pi} \frac{tg\, x - x}{x - sen\, x} = 0$$

$$\lim_{x \to 0} \frac{x - sen\, x}{x^3} = \frac{1}{6}$$