

## TAREA 4 – 8

Calcule el límite si es que existe usando la Regla de L'Hôpital.

1.  $\lim_{x \rightarrow 0} \frac{\text{sen}(x)}{2x}$

2.  $\lim_{x \rightarrow 5} \frac{\sqrt{x-1}-2}{x^2-25}$

3.  $\lim_{x \rightarrow 2} \frac{2x^2-5x+2}{5x^2-7x-6}$

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

5.  $\lim_{x \rightarrow 0} \frac{\text{sen}(x)-x}{\tan(x)-x}$

6.  $\lim_{x \rightarrow 0} \frac{x+1-e^x}{x^2}$

7.  $\lim_{x \rightarrow 0} \frac{x-\text{sen}(x)}{x^3}$

8.  $\lim_{x \rightarrow \frac{\pi}{2}} \frac{1+\text{sen}(x)}{\cos^2(x)}$

9.  $\lim_{x \rightarrow (\frac{\pi}{2})^-} \frac{2+\sec(x)}{3 \tan(x)}$

10.  $\lim_{x \rightarrow +\infty} \frac{x^2}{\ln(x)}$

11.  $\lim_{x \rightarrow 0^+} \frac{\ln[\text{sen}(x)]}{\ln[\text{sen}(2x)]}$

12.  $\lim_{x \rightarrow 0} \frac{e^x - e^{-x} - 2 \text{sen}(x)}{x \text{sen}(x)}$

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

14.  $\lim_{x \rightarrow +\infty} \frac{2x^2+3x+1}{5x^2+x+4}$

15.  $\lim_{x \rightarrow +\infty} \frac{x \ln(x)}{x + \ln(x)}$

16.  $\lim_{x \rightarrow +\infty} \frac{x^n}{e^x}, n > 0$

17.  $\lim_{x \rightarrow 2^+} \frac{\ln(x-1)}{(x-2)^2}$

18.  $\lim_{x \rightarrow 0} \frac{\tan(x) - \text{sen}(x)}{x^3 \tan(x)}$

19.  $\lim_{x \rightarrow 1} \frac{x^4 - x^3 - 3x^2 + 5x - 2}{x^4 - 5x^3 + 9x^2 - 7x + 2}$

20.  $\lim_{x \rightarrow +\infty} \frac{2e^{3x} + \ln(x)}{e^{3x} + x^2}$