



Calcular, caso existam, cada um dos seguintes limites:

$$a) \lim_{x \rightarrow +\infty} e^{-x} \cdot x \quad (0)$$

$$b) \lim_{x \rightarrow +\infty} \frac{e^{x-3}}{x-3} \quad (+\infty)$$

$$c) \lim_{x \rightarrow +\infty} \frac{4e^{3x} - e^{2x}}{x \cdot e^{2x}} \quad (+\infty)$$

$$d) \lim_{x \rightarrow +\infty} x \cdot 4^{-x} \quad (0)$$

$$e) \lim_{x \rightarrow 0} \frac{e^{x+4} - e^4}{x} \quad (e^4)$$

$$f) \lim_{x \rightarrow 0} \frac{x^3}{1 - e^{x^2}} \quad (-1)$$

$$g) \lim_{x \rightarrow 0} \frac{3x}{1 - e^{4x}} \quad (-3/4)$$

$$h) \lim_{x \rightarrow 0} \frac{\ln(1+3x)}{x} \quad (3)$$

$$i) \lim_{x \rightarrow 0} \frac{2x}{\ln(1+4x)} \quad (1/2)$$

$$j) \lim_{x \rightarrow 1} \frac{\log x}{x^2 - 1} \quad (1/6)$$

$$k) \lim_{x \rightarrow 1} \frac{1 - x^2}{\ln(2-x)} \quad (2)$$

$$l) \lim_{x \rightarrow 3} \frac{\ln(x-2)}{x-3} \quad (1)$$

$$m) \lim_{x \rightarrow 4} \frac{\ln(x-3)}{x^2 - 2x - 8} \quad (1/6)$$

$$n) \lim_{x \rightarrow 0} \frac{\ln(x+1)}{x^3} \quad (+\infty)$$

$$o) \lim_{x \rightarrow 0} \frac{e^x - 1}{\ln(x+1)} \quad (1)$$

$$p) \lim_{x \rightarrow 2} \frac{\ln(x-1)}{x-2} \quad (1)$$

$$q) \lim_{x \rightarrow -4} \frac{x+4}{\ln(x+5)} \quad (1)$$

$$r) \lim_{x \rightarrow +\infty} \frac{e^x}{\ln x} \quad (+\infty)$$

$$s) \lim_{x \rightarrow +\infty} \frac{x + \ln x}{x} \quad (1)$$

$$t) \lim_{x \rightarrow 1} \frac{x^2 - 1}{\ln x^2} \quad (1)$$