

LIMITES NO INFINITO, LIMITES INFINITO E LIMITES FUNDAMENTAIS

1. Calcule os limites:

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| <p>(a) $\lim_{x \rightarrow +\infty} \frac{4x^3 - 5x^2 + x}{x^4 + 7x^2}$</p> <p>(b) $\lim_{x \rightarrow -\infty} \frac{3x^5 - x^4 + 7x}{6x^5 + 8x^4 + 20}$</p> <p>(c) $\lim_{x \rightarrow -\infty} \frac{x^5 + \sin(x)}{20x^4 + 3x^2 + x}$</p> <p>(d) $\lim_{x \rightarrow +\infty} \frac{\sqrt{x^2 - \sqrt{x}}}{\sqrt{x+1}}$</p> <p>(e) $\lim_{x \rightarrow -\infty} \frac{\sqrt{x^2 + \sqrt{x^2 + 1}}}{x}$</p> <p>(f) $\lim_{x \rightarrow 0} \frac{x}{\tan(x)}$</p> <p>(g) $\lim_{x \rightarrow 0} \frac{1 - \cos(x)^4}{x^2}$</p> | <p>(h) $\lim_{x \rightarrow \infty} \left(1 + \frac{5}{x-1}\right)^{x+7}$</p> <p>(i) $\lim_{x \rightarrow 0} \frac{\left(7^{x-1} - \frac{1}{7}\right)}{x}$</p> <p>(j) $\lim_{x \rightarrow 0} \frac{((ab)^x - a^x)}{ax} \quad a, b \neq 0$</p> <p>(k) $\lim_{x \rightarrow +\infty} \left(1 + \frac{2}{x+1}\right)^x$</p> <p>(l) $\lim_{x \rightarrow 0} x^2 \cot^2(x)$</p> <p>(m) $\lim_{x \rightarrow 0} \frac{\tan(x)}{x \cdot \sec(x)}$</p> <p>(n) $\lim_{x \rightarrow 0} x \cdot \sec(x) \cdot \csc(x)$</p> |
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2. Se $f(x) = \frac{3x + |x|}{7x - 5|x|}$, calcule $\lim_{x \rightarrow +\infty} f(x)$ e $\lim_{x \rightarrow -\infty} f(x)$.

3. Calcule:

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| <p>(a) $\lim_{x \rightarrow 0} \frac{\tan(x)}{x}$</p> <p>(b) $\lim_{x \rightarrow 0} \frac{x}{\sin(x)}$</p> <p>(c) $\lim_{x \rightarrow 0} \frac{\sin(3x)}{x}$</p> <p>(d) $\lim_{x \rightarrow \pi} \frac{\sin(x)}{x - \pi}$</p> <p>(e) $\lim_{x \rightarrow 0} \frac{x^2}{\sin(x)}$</p> | <p>(f) $\lim_{x \rightarrow 0} \frac{3x^2}{\tan(x) \sin(x)}$</p> <p>(g) $\lim_{x \rightarrow 0} \frac{\tan(3x)}{\sin(4x)}$</p> <p>(h) $\lim_{x \rightarrow 0} \frac{1 - \cos(x)}{x}$</p> <p>(i) $\lim_{x \rightarrow 0} \frac{x - \tan(x)}{x + \tan(x)}$</p> <p>(j) $\lim_{x \rightarrow 1} \frac{\sin(\pi x)}{x - 1}$</p> |
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