Lista 3

1) $\lim_{x \to +\infty} (x^2 + 5) = +\infty$

2) $\lim_{x \to +\infty} (x^3 + 1865) = +\infty$

3) $\lim_{x \to +\infty} (x^2 + x + 6) = +\infty$

4) $\lim_{x \to +\infty} (3 - x) = -\infty$

5) $\lim_{x \to +\infty} (x^2 - x) = +\infty + (-\infty) = +\infty - \infty$ indeterminação

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

7) $\lim_{x \to +\infty} (-x^4 + 7x^3 - x^2 + x + 1)$

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

$x^2 \cdot x^1$

DSTQQSS

⑥ $\lim_{x \to +\infty} \left[x^3 \left(1 - \frac{1}{x} - \frac{1}{x^2} + \frac{1}{x^3} \right) \right] = \lim_{x \to +\infty} x^3 = +\infty$ //

$+\infty^4 = +\infty$

⑦ $\lim_{x \to -\infty} x^4 = +\infty$

⑧ $\lim_{x \to +\infty} -(x^4) = -\infty$ //

⑨ $\lim_{x \to +\infty} \frac{x+1}{x^2+1} = \frac{+\infty}{+\infty}$ indeterminação.

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

Símbolos de indetermi: $\frac{0}{0}$; $+\infty - \infty$; $\frac{+\infty}{+\infty}$; $\frac{-\infty}{+\infty}$; $\frac{-\infty}{+\infty}$

$\lim_{x \to +\infty} \frac{1}{x} = 0$ // $\frac{-\infty}{-\infty}$; $1^{+\infty}$; $0 \cdot \left(\frac{+\infty}{-\infty}\right)$; 0^0

⑩ $\lim_{x \to -\infty} \frac{x^2 - 5x + 8}{x + 3} = \lim_{x \to -\infty} \frac{x^2}{x} = \lim_{x \to -\infty} \frac{x}{1}$

$\lim_{x \to -\infty} x = -\infty$ //

⑪ $\lim_{x \to +\infty} \frac{1 - x + x^2 + 5x^3}{4 + x^3} = \lim_{x \to +\infty} \frac{5x^3}{x^3} = \lim_{x \to +\infty} 5 = 5$

⑫ $\lim_{x \to +\infty} \frac{3 - x + 2x^2}{5 - 7x^2} = \lim_{x \to +\infty} \frac{2x^2}{-7x^2} = \lim_{x \to +\infty} \left(-\frac{2}{7}\right)$

$-\frac{2}{7}$ //

⑬ $\lim_{x \to -\infty} \frac{1 - 4x^3}{5x^3 - 8} = \lim_{x \to -\infty} \frac{-4x^3}{5x^3}$

$= \lim_{x \to -\infty} \frac{-4}{5} = -\frac{4}{5}$ //

credeal

14) $\lim_{x \to +\infty} \frac{2x^3 - 5x^2 + 3}{x^2 + 4x - 1} = \lim_{x \to +\infty} \frac{2x^3}{x^2} = \lim_{x \to +\infty} 2x = +\infty$

15) $\lim_{x \to -\infty} \frac{5x^2 - 2x}{-3x^4 + 2x^3 - x^2} = \lim_{x \to -\infty} \frac{5x^2}{-3x^4} = \lim_{x \to -\infty} \left(-\frac{5}{3} \cdot \frac{1}{x^2}\right) = 0$

16) $\lim_{x \to +\infty} (\ln x) = +\infty$

17) $\lim_{x \to +\infty} \left[\ln\left(\frac{1}{x}\right)\right] = \ln 0^+ = -\infty$

18) $\lim_{x \to -\infty} e^{1-x^2} = e^{-\infty} = 0$

19) $\lim_{x \to +\infty} (10 + e^{-x}) = 10 + 0 = 10$