

②

$\lim_{x \rightarrow \infty} \frac{2x+5}{2-x} = \frac{-\infty}{+\infty} = \frac{-2}{1} = -2$

$\lim_{x \rightarrow \infty} \frac{10x-5}{x^2+1} = \frac{-\infty}{+\infty} = 0$

$\lim_{x \rightarrow -\infty} \frac{3x^2+x-4}{2x+3} = \frac{+\infty}{-\infty} = -\infty$

$\lim_{x \rightarrow -\infty} \frac{x^2+2x-3}{7+\sqrt{x}} = \frac{-\infty}{-\infty} = \frac{-1}{-5} = \frac{1}{5}$

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③

$\lim_{n \rightarrow \infty} \frac{\sqrt{3n^2+6n}}{2n+1} = \frac{+\infty}{+\infty} = \frac{\sqrt{3}}{2}$

$\lim_{n \rightarrow \infty} \sqrt{\frac{5n^2-7}{n+1}} = \frac{+\infty}{+\infty} = +\infty$

$\lim_{n \rightarrow \infty} \frac{1+\sqrt{n}}{2n-3} = \frac{+\infty}{+\infty} = 0$

$\lim_{n \rightarrow \infty} \frac{3n}{\sqrt{n^2+2}} = \frac{+\infty}{+\infty} = 0$

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④

$\lim_{x \rightarrow +\infty} (e^x - x^3) = e^{+\infty} - \infty^3 = \infty - \infty = +\infty$

$\lim_{x \rightarrow +\infty} \frac{\ln(x^2+1)}{x} = \frac{+\infty}{+\infty} = 0$

$\lim_{x \rightarrow +\infty} \frac{x^2+1}{e^x} = \frac{+\infty}{+\infty} = 0$

$\lim_{x \rightarrow +\infty} \sqrt{x^2+x} - \sqrt{x+7} = (+\infty) - \infty = +\infty$

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**K**  
**0** ⇒ **HALLAR LIMITES LATERALES**

$\lim_{x \rightarrow 2} \frac{2}{x-2} = \frac{2}{0}$  (Ind)
   
 $\lim_{x \rightarrow 2^-} \frac{2}{x-2} = \frac{2}{0^-} = -\infty$ 
  
 $\lim_{x \rightarrow 2^+} \frac{2}{x-2} = \frac{2}{0^+} = +\infty$

$\lim_{x \rightarrow -2} \frac{-2}{x-2} = \frac{-2}{0}$  (Ind)
   
 $\lim_{x \rightarrow -2^-} f(x) = \frac{-2}{0^-} = +\infty$ 
  
 $\lim_{x \rightarrow -2^+} f(x) = \frac{-2}{0^+} = -\infty$

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$$\lim_{x \rightarrow 2} \frac{3x}{(x-2)^2} = \frac{6}{0} \text{ (Ind)}$$

$$\left. \begin{aligned} \lim_{x \rightarrow 2^-} f(x) &= \frac{6}{0^+} \\ \lim_{x \rightarrow 2^+} f(x) &= \frac{6}{0^+} \end{aligned} \right\} +\infty$$

$$\lim_{x \rightarrow -2} \frac{3}{x+2} = \frac{3}{0}$$

$$\left. \begin{aligned} \lim_{x \rightarrow -2^-} f(x) &= \frac{3}{0^-} = -\infty \\ \lim_{x \rightarrow -2^+} f(x) &= \frac{3}{0^+} = +\infty \end{aligned} \right\} \text{ (Ind)}$$

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$$\frac{0}{0} \text{ FACTORIZAR Y SIMPLIFICAR}$$

$$\lim_{x \rightarrow a} \frac{P(x)}{Q(x)} = \lim_{x \rightarrow a} \frac{(x-a) P_1(x)}{(x-a) P_2(x)}$$

$$\lim_{x \rightarrow 2} \frac{x^2 - 5x + 6}{x^2 + 3x - 10} = \frac{4 - 10 + 6}{4 + 6 - 10} = \frac{0}{0} \text{ (Ind)}$$

$$x^2 - 5x + 6 = 0 \quad x = \frac{5 \pm 1}{2} \begin{matrix} \swarrow \\ \searrow \end{matrix} \begin{matrix} 3 \\ 2 \end{matrix}$$

$$x^2 + 3x - 10 = 0 \quad x = \frac{-3 \pm 7}{2} \begin{matrix} \swarrow \\ \searrow \end{matrix} \begin{matrix} 2 \\ -5 \end{matrix}$$

$$\lim_{x \rightarrow 2} \frac{(x-3)(x-2)}{(x-2)(x+5)} = \frac{-1}{7}$$

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