INTERRO N°9

① Voir le cours

② $\lim\limits_{x \to -\infty} f(x) = 2$ $\qquad$ $\lim\limits_{x \to 1^-} f(x) = -\infty$

$\lim\limits_{x \to +\infty} f(x) = +\infty$ $\qquad$ $\lim\limits_{x \to 1^+} f(x) = +\infty$

③ a]

$$\left.\begin{array}{l} \lim\limits_{x \to -\infty} x = -\infty \\ \lim\limits_{x \to -\infty} \dfrac{1}{x^2} = 0 \\ \lim\limits_{x \to -\infty} 1 = 1 \end{array}\right\} \text{Par somme de limites}$$

$$\boxed{\lim\limits_{x \to -\infty} x - \frac{1}{x^2} + 1 = -\infty}$$

b] $\lim\limits_{x \to +\infty} \dfrac{3x-1}{x-6x^5} = \lim\limits_{x \to +\infty} \dfrac{3x}{-6x^5}$ (limite en l'infini d'une fraction rationnelle)

$= \lim\limits_{x \to +\infty} \dfrac{3}{-6x^4}$

$$\text{Or } \left.\begin{array}{l} \lim\limits_{x \to +\infty} 3 = 3 \\ \lim\limits_{x \to +\infty} -6x^4 = -\infty \end{array}\right\} \text{Par limite de quotient :}$$

$$\boxed{\lim\limits_{x \to +\infty} \frac{3}{-6x^4} = 0}$$

c]

$$\left.\begin{array}{l} \lim\limits_{x \to 3^+} x+2 = 3+2 = 5 > 0 \\ \lim\limits_{x \to 3^+} x-3 = 0^+ \end{array}\right\} \text{Par limite de quotient :}$$

$$\boxed{\lim\limits_{x \to 3^+} \frac{x+2}{x-3} = +\infty}$$

x	$-\infty$		3		$+\infty$
$x-3$		$-$	0^- | 0 | 0^+	$+$	