

T → Serie!

ex 1:

$$1) f_1(x) = \frac{x}{\sqrt{1+x^2} - \sqrt{1+x}}$$

$$\Rightarrow \sqrt{1+x^2} - \sqrt{1+x} \neq 0$$

x should not be 0 or 1

$\Rightarrow x$ should not be $[-1, 1]$

$$\Leftrightarrow Df_1 =]-1; +\infty[\setminus (0, 1)$$

$$\left(Df_1^2 = \left\{]-1; 0[\cup]0; 1[\cup \right. \right. \\ \left. \left.]1; +\infty[\setminus (0, 1) \right\} \right)$$

$$2) f_2(x) = \ln(1+x^3) + x - 1$$

$$Df_2 =]-1; +\infty[$$

$$3) f_3(x) = \frac{\ln(x)}{\sqrt{x^2} - 4} \quad x \neq 0$$

$\Leftrightarrow x$ should not be 2

$$\Leftrightarrow Df_3 =]2; +\infty[\setminus (2, -2)$$

$$f_4(x) = \sqrt{|x+2| - |2x-4|}$$

$$\Leftrightarrow |x+2| - |2x-4| \geq 0.$$

$$\Leftrightarrow |x+2| = |2x-4|$$

$$\Leftrightarrow x+2 = 2x-4$$

$$\Leftrightarrow x = 2x-4-2$$

$$\Leftrightarrow x = 2x-6$$

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

$$\Leftrightarrow x \left(\frac{1 - \ln(1+x)}{x} \right)$$

