

$$\lim_{x \rightarrow 0} \frac{\sin x - \tan x}{x^3} = \lim_{x \rightarrow 0} \frac{\sin x - \frac{\sin x}{\cos x}}{x^3} =$$

$$= \lim_{x \rightarrow 0} \frac{\sin x \left(1 - \frac{1}{\cos x}\right)}{x^3} = \lim_{x \rightarrow 0} \underbrace{\frac{\sin x}{x}}_1 \cdot \underbrace{\frac{\cos x - 1}{x^2}}_{-\frac{1}{2}} \cdot \underbrace{\frac{1}{\cos x}}_1 = -\frac{1}{2}$$

$$\lim_{x \rightarrow 0} \frac{1 - \cos x}{x^2} = \frac{1}{2}$$

LIMITE
NOTEVOLE

$-\frac{1}{2}$

$$f(x) = \frac{\log(1+x^2)}{x+1}$$

$$f'(x) = \frac{\frac{1}{1+x^2} \cdot 2x \cdot (x+1) - \log(1+x^2) \cdot 1}{(x+1)^2}$$

DERIVATA DI $1+x^2$

DERIVATA DEL NUMERATORE

DERIVATA DEL DENOMINATORE

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