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ESERCITAZIONE
CALCOLO DI DERIVATE

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Esercizio 1

Calcolare la derivata delle seguenti funzioni ove ciò è possibile:

a) $f : \mathbb{R} \to \mathbb{R}$

$$f(x) = \mid x^2 - 9 \mid \sin x;$$

b) $f : \mathbb{R} \to \mathbb{R}$

$$f(x) = \tan x \log x^4;$$

c) $f : \mathbb{R} \setminus \{y \in \mathbb{R} : \ y = \frac{\pi}{2} + k\pi, \ k \in Z\} \to \mathbb{R}$

$$f(x) = e^x \tan x;$$

d) $f : \mathbb{R} \to \mathbb{R}$

$$f(x) = \frac{7x^4 - 2x^2}{5 + x^2};$$

e) $f : \mathbb{R} \to \mathbb{R}$

$$f(x) = \frac{\sin x}{5 + x^2};$$

f) $f : \mathbb{R} \to \mathbb{R}$

$$f(x) = \frac{\sin^2 x}{5 + x^2};$$

g) $f : \mathbb{R} \to \mathbb{R}$

$$f(x) = \frac{\sin^2(4x)}{5 + x^2};$$

h) $f : \mathbb{R} \to \mathbb{R}$

$$f(x) = \frac{\sin^2(\log(1 + \sqrt{1 + x^2}))}{5 + x^2};$$

i) $f : \mathbb{R} \setminus \{-1, 1\} \to \mathbb{R}$

$$f(x) = \frac{\sin^2(\log(1 + \sqrt{1 + x^2}))}{\mid x^2 - 1 \mid};$$

l) $f : \mathbb{R} \to \mathbb{R}$

$$f(x) = \cos^4(5x^2) \sin^2(\log(1 + \sqrt{1 + x^2})).$$