

CORRECTION

EXERCICE n°1 :

- a. $f(x) = 3x + 1 + \ln x : D_f =]0; +\infty[$ et $f'(x) = 3 + \frac{1}{x}$.
- b. $f(x) = 2x^2 - \ln x : D_f =]0; +\infty[$ et $f'(x) = 4x - \frac{1}{x}$.
- c. $f(x) = x - \ln 2 + \ln x : D_f =]0; +\infty[$ et $f'(x) = 1 + \frac{1}{x}$.
- d. $f(x) = x \ln x : D_f =]0; +\infty[$ et $f'(x) = 1 \times \ln x + x \times \frac{1}{x} = \ln x + 1$.
- e. $f(x) = \frac{2 \ln x}{\ln 3} : D_f =]0; +\infty[$ et $f'(x) = \frac{2}{x \ln 3}$.
- f. $f(x) = (\ln x)^2 - 2 \ln x - 4 : D_f =]0; +\infty[$ et $f'(x) = 2 \times \frac{1}{x} \times \ln x - \frac{2}{x} = \frac{2(\ln x - 1)}{x}$.
- g. $f(x) = (x - 2) \ln x : D_f =]0; +\infty[$ et $f'(x) = 1 \times \ln x + (x - 2) \times \frac{1}{x} = \ln x + \frac{x - 2}{x}$.
- h. $f(x) = 3(\ln x)^2 + 2 \ln x - 1 : D_f =]0; +\infty[$ et $f'(x) = 3 \times 2 \times \frac{1}{x} \times \ln x + \frac{2}{x} = \frac{2(3 \ln x + 1)}{x}$.