

n° 46 p 64

1) $f(x) = (2x+3)(x^2+1)$ sur \mathbb{R}

$$(uv)' = u'v + uv'$$

$$f'(x) = 2(x^2+1) + (2x+3)(2x)$$

$$f'(x) = 2x^2 + 2 + 4x^2 + 6x$$

$$\underline{f'(x) = 6x^2 + 6x + 2}$$

2) $f(x) = \frac{x+1}{5x-1}$ sur $[3; 10]$

$$\left(\frac{u}{v}\right)' = \frac{u'v - uv'}{v^2}$$

$$f'(x) = \frac{(1)(5x-1) - (x+1)(5)}{(5x-1)^2}$$

$$f'(x) = \frac{5x-1-5x-5}{(5x-1)^2}$$

$$\underline{f'(x) = \frac{-6}{(5x-1)^2}}$$

$$u(x) = x+1$$

$$v(x) = 5x-1$$

$$u'(x) = 1$$

$$v'(x) = 5$$

3) $f(x) = \frac{1}{x-1} + \sqrt{x}$ sur $[2; 5]$

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

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