Exercices de dérivation

■ Dériver les fonctions suivantes

1) $f(x) = \sqrt{5x-2}$

2) $f(x) = \sqrt{2x^2 - x}$

3) $f(x) = \frac{\sqrt{5x-5}}{x^2}$

4) $f(x) = \frac{x^2-5}{\sqrt{x-3}}$

5) $f(x) = 2\sqrt{\frac{1}{4x+2}}$

6) $f(x) = (3x-1)^4$

7) $f(x) = \sqrt[3]{3x^2+2x+4}$

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

9) $f(x) = \frac{5x}{\sqrt{3x^2+5}}$

10) $f(x) = \frac{\sqrt{5-4x}}{\sqrt{x+2}}$

■ Solutions :

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

2) $f'(x) = \frac{4x-1}{2\sqrt{x(2x-1)}}$

3) $f'(x) = -\frac{13}{2\sqrt{5-4x}\,(x+2)^{3/2}}$

4) $f'(x) = \frac{3x^2-12x+5}{2(x-3)^{3/2}}$

5) $f'(x) = -4\left(\frac{1}{4x+2}\right)^{3/2}$

6) $f'(x) = 12(3x-1)^3$

7) $f'(x) = \frac{2(3x+1)}{3(3x^2+2x+4)^{2/3}}$

8) $f'(x) = \frac{\sqrt{5}\,(9-7x)}{2(1-5x)^2\sqrt{x^2+x-1}}$

9) $f'(x) = \frac{25}{(3x^2+5)^{3/2}}$

10) $f'(x) = -\frac{13}{2\sqrt{5-4x}\,(x+2)^{3/2}}$