Exercices de dérivation de fonctions composées

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

2) $f(x) = (8 - 5x^2)^2$

3) $f(x) = \dfrac{1}{(3x-1)^3}$

4) $f(x) = \sin(1 - 2x^2)$

5) $f(x) = \sin^3(x)$

6) $f(x) = \cos(\sqrt{x})$

7) $f(x) = \sin\left(\dfrac{1}{x}\right)$

8) $f(x) = \cos(3x)\sin(x)$

9) $f(x) = \sin\left(\dfrac{x}{x-2}\right)$

10) $f(x) = 4\cos(3x) - \sin(x)$

Solutions :

1) $f'(x) = \dfrac{10x-3}{2\sqrt{5x^2-3x+2}}$

2) $f'(x) = 20x(5x^2 - 8)$

3) $f(x) = -\dfrac{9}{(3x-1)^4}$

4) $f'(x) = -4x\cos(1 - 2x^2)$

5) $f'(x) = 3\sin^2(x)\cos(x)$

6) $f'(x) = -\dfrac{\sin(\sqrt{x})}{}$

7) $f'(x) = -\dfrac{\cos\left(\frac{1}{x}\right)}{x^2}$

8) $f'(x) = \cos(x)\cos(3x) - 3\sin(x)\sin(3x)$

9) $f'(x) = -\dfrac{2\cos\left(\frac{x}{x-2}\right)}{(x-2)^2}$

10) $f'(x) = -12\sin(3x) - \cos(x)$
*modifié 10-09-14