

Nom :

DERIVATION – 1 :**1 – Premiers calculs de dérivée (exercices pages 104 – 105)**

n°	fonction	dérivée	
13	$f(x) = 7x - 2$	$f'(t) = 7$	
15	$f(t) = t^2/3 + t/4 - 2$	$f'(t) = 2t/3 + 1/4$	
17	$f(t) = t^3/3 - t^2/2$	$f'(t) = t^2 - t$	
18	$f(x) = 0.75x^3 - 0.01x^2 - 1$	$f'(x) = 2.25x^2 - 0.02x$	
19	$f(q) = -7q^3 + 0.01q^2 - 6q$	$f'(q) = -21q^2 + 0.02q - 6$	
24	$f(x) = 7/x$	$f'(x) = -7/x^2$	
45	$f(x) = x^3 - 2x^2 + x + 1$	$f'(x) = 3x^2 - 4x + 1$	$f'(-2) = 21$
37	$f(x) = x^3 - 24x^2 + 144x + 25$	$f'(x) = 3x^2 - 48x + 144$	
	$\Delta = 576 \quad x_1 = 4 \quad x_2 = 12$	$f'(x) = 3(x-4)(x-12)$	

2 – Dérivée d'un produit, d'un inverse, d'un quotient (exercices pages 104 – 105)

n°	fonction	dérivée		
21	$f(x) = (-3x + 4)(-x + 3)$	$f'(x) = -3(-x + 3) - 1(-3x + 4)$	$= 6x - 13$	
23	$f(x) = (-4x + 1)^2$	$f'(x) = -8(-4x + 1)$		
26	$f(x) = 1/x^2$	$f'(x) = -2x/x^4$	$= -2/x^3$	
29	$f(x) = \frac{3}{2x-1}$	$f'(x) = \frac{-6}{(2x-1)^2}$		
30	$f(x) = 2x + 3 - \frac{3}{2x-1}$	$f'(x) = 2 + \frac{6}{(2x-1)^2}$	$= 8 \frac{x^2 - x + 1}{(2x-1)^2}$	
39	$f(x) = \frac{2x}{4x+3}$	$f'(x) = \frac{2(4x+3) - 4(2x)}{(4x+3)^2}$	$= \frac{6}{(4x+3)^2}$	
33	$f(x) = \frac{4x+3}{2x-1}$	$f'(x) = \frac{4(2x-1) - 2(4x+3)}{(2x-1)^2}$	$= \frac{-10}{(2x-1)^2}$	
46	$f(x) = \frac{2x-3}{x+4}$	$f'(x) = \frac{2(x+4) - 1(2x-3)}{(x+4)^2}$	$= \frac{11}{(x+4)^2}$	$f'(0.5) = 44/81$
47	$f(x) = \frac{-x}{x+2}$	$f'(x) = \frac{-1(x+2) - 1(-x)}{(x+2)^2}$	$= \frac{-2}{(x+2)^2}$	$f'(-1) = -2$
48	$f(x) = \frac{-x}{x^2+3}$	$f'(x) = \frac{-1(x^2+3) - 2x(-x)}{(x^2+3)^2}$	$= \frac{x^2-3}{(x^2+3)^2}$	$f'(1) = \frac{-1}{8}$
35	$f(x) = \frac{3x^2-1}{x^2-x-2}$	$f'(x) = \frac{6x(x^2-x-2) - (2x-1)(3x^2-1)}{(x^2-x-2)^2}$	$= \frac{-3x^2-10x-1}{(x^2-x-2)^2}$	
36	$f(x) = \frac{2x^2-2x+1}{3x^2-4x+1}$	$f'(x) = \frac{(4x-2)(3x^2-4x+1) - (6x-4)(2x^2-2x+1)}{(3x^2-4x+1)^2}$	$= \frac{-2x^2-2x+2}{(3x^2-4x+1)^2}$	