Dérivée et géométrie

$-b/2a = \frac{3}{4}$

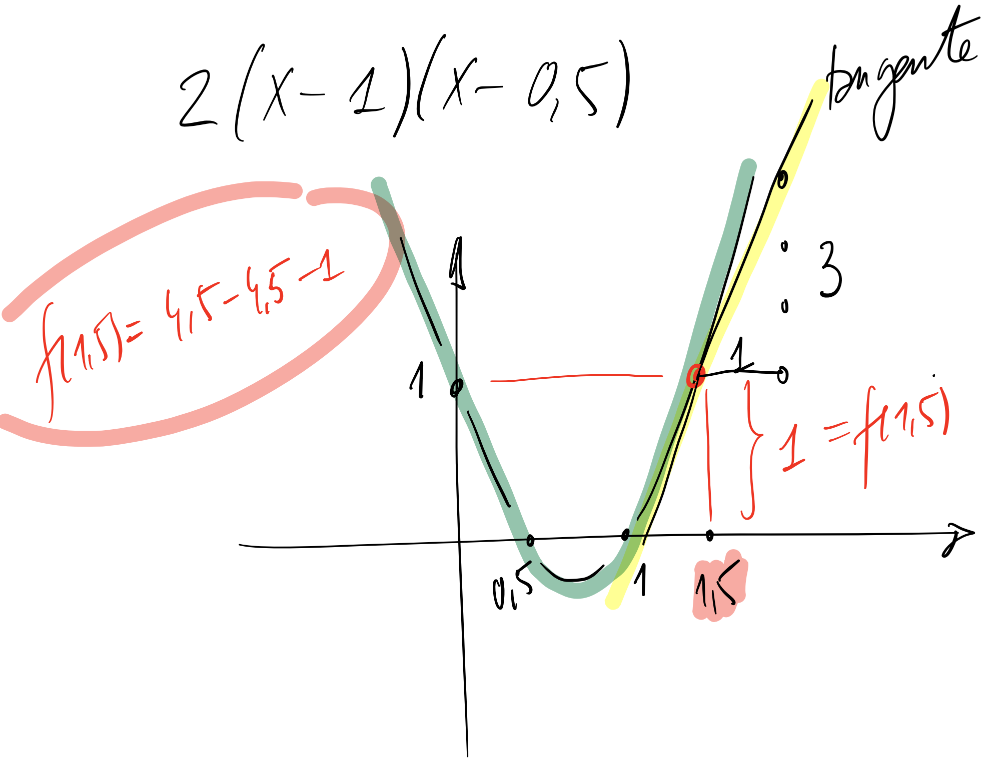
$f(x) = 2x^2 - 3x + 1$

$f'(x) = 2 \cdot 2x - 3 = 4x - 3$

$x = \frac{3}{4}$

$x = \frac{3 \pm \sqrt{9-8}}{4} = \begin{cases} 1 \\ 1/2 \end{cases}$

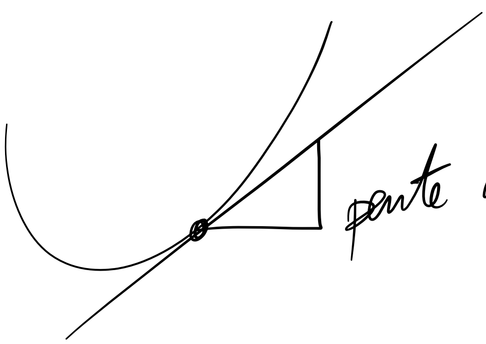
$2(x-1)(x-0{,}5)$



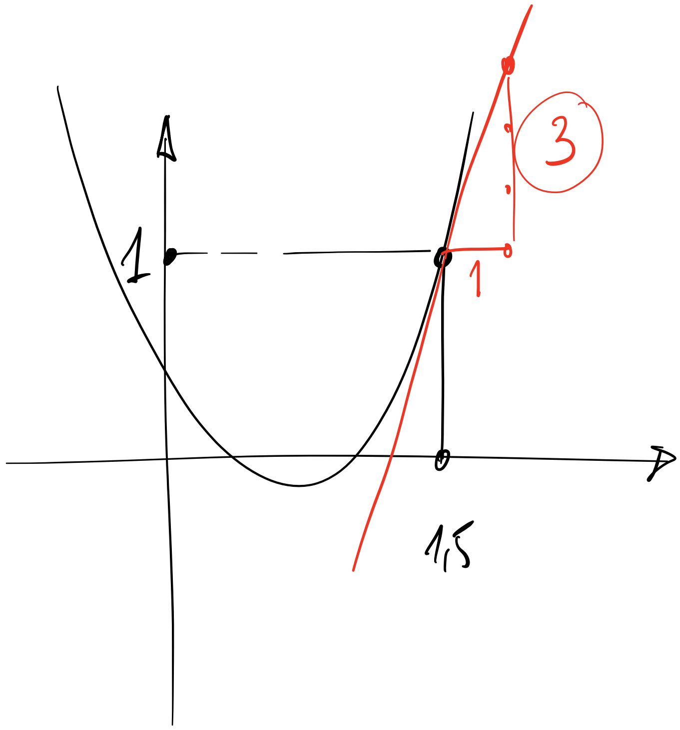
$f'(x) = 4x - 3$

$x = 1{,}5$

$f'(1{,}5) = 4 \cdot 1{,}5 - 3$
$= 3$

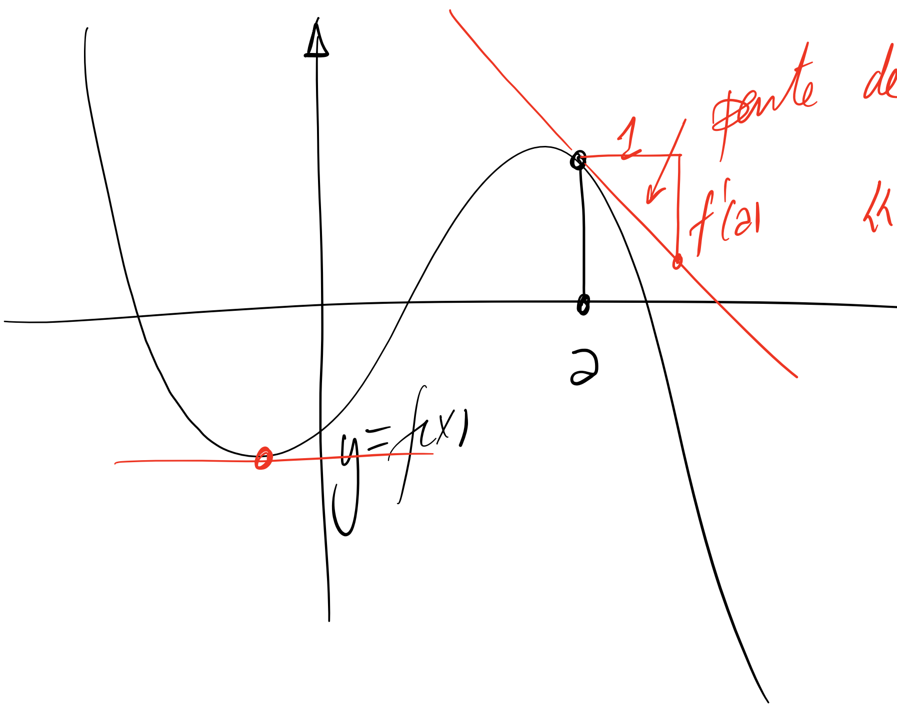


pente de la tangente = dérivée



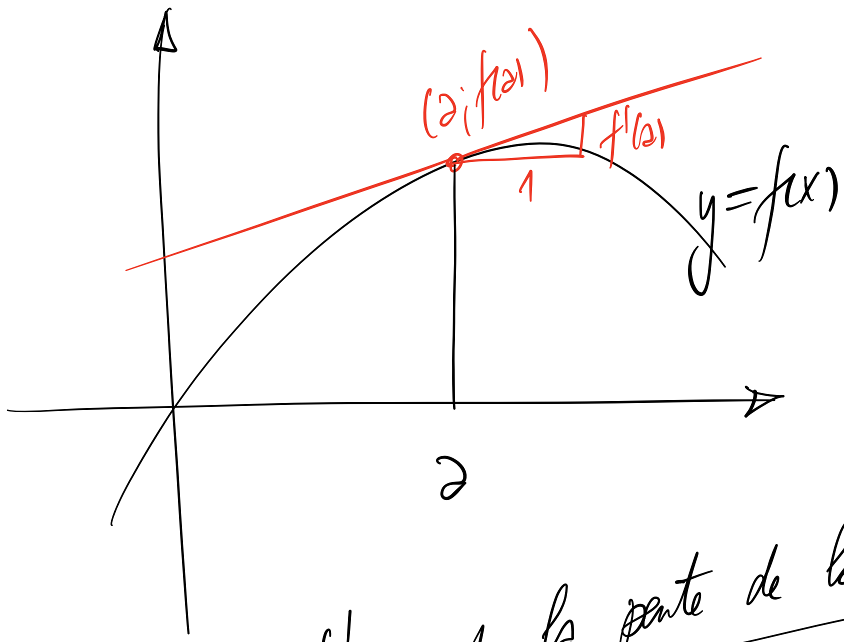
pente de la tangente : 3

$f'(1,5)$



pente de la tangente

$f'(2)$ « en dessous de 2 »



$f'(a)$ est la pente de la tangente au point $(a; f(a))$

$$\left(\frac{1}{x}+\frac{1}{2x^2}+\frac{1}{3x^3}\right)' = \left(\frac{1}{x}\right)' + \left(\frac{1}{2x^2}\right)' + \left(\frac{1}{3x^3}\right)' =$$

$$\frac{\overset{0}{1'\cdot x} - 1\cdot x'}{x^2} + \frac{\overset{0}{1'\cdot 2x^2} - 1\cdot(2x^2)'}{(2x^2)^2} + \frac{\overset{0}{1'\cdot 3x^3} - 1\cdot(3x^3)'}{(3x^3)^2} =$$

$$\frac{-1}{x^2} + \frac{-\cancel{2}\cdot\cancel{2}\cancel{x}}{\cancel{4}\,x^{\cancel{4}\,3}} + \frac{-\cancel{3}\cdot\cancel{3}x^{\cancel{2}}}{\underset{\cancel{3}}{\cancel{9}}\,x^{\cancel{6}\,4}} =$$

$$-\frac{1}{x^2} - \frac{1}{x^3} - \frac{1}{x^4}$$

$$\left(\frac{1}{\sin x \cos x}\right)' = \frac{\overbrace{1' \cdot \sin x \cdot \cos x}^{0} - 1 \cdot \left(\overset{f \cdot g}{\sin x \cos x}\right)'}{(\sin x \cos x)^2}$$

$$= \frac{-\left(\overset{f'}{(\sin x)'} \cdot \overset{g}{\cos x} + \overset{f}{\sin x} \cdot \overset{g'}{(\cos x)'}\right)}{(\sin x \cos x)^2}$$

$$(f \cdot g)' = f'g + fg'$$