$\boxed{28.11}$

$(x^q)' = q x^{q-1} \quad q \in \mathbb{R}$

d) $\left(\frac{1}{\sqrt[3]{x^2}} \right)' = \left(\frac{1}{x^{\frac{2}{3}}} \right)' = \left(x^{-\frac{2}{3}} \right)'$

$= -\frac{2}{3} x^{\left(-\frac{2}{3} - \frac{3}{3}\right)}$

$= -\frac{2}{3} x^{-\frac{5}{3}} = -\frac{2}{3} \cdot \frac{1}{\sqrt[3]{x^5}}$

k) $$\left((1+x)\cdot\sqrt{1-x}\right)' = (1+x)'\cdot\sqrt{1-x} + (1+x)\left(\sqrt{1-x}\right)'$$

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

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

$$\cdot\frac{2\sqrt{1-x}}{2\sqrt{1-x}}$$

$$= \sqrt{1-x} + (1+x)\cdot\frac{-1}{2\sqrt{1-x}}$$

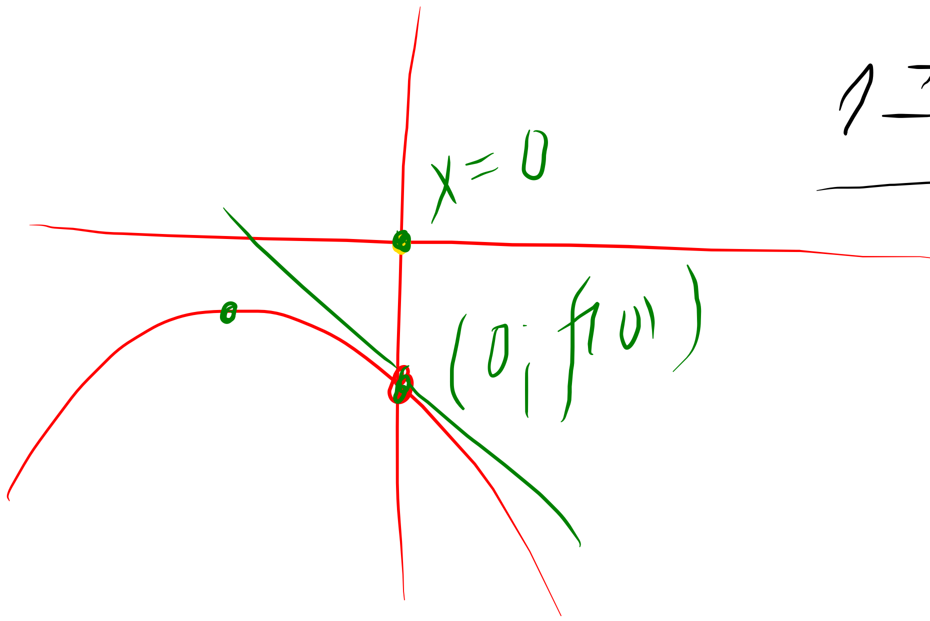
$$= \frac{2-2x-1-x}{2\sqrt{1-x}} = \frac{1-3x}{2\sqrt{1-x}}$$

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

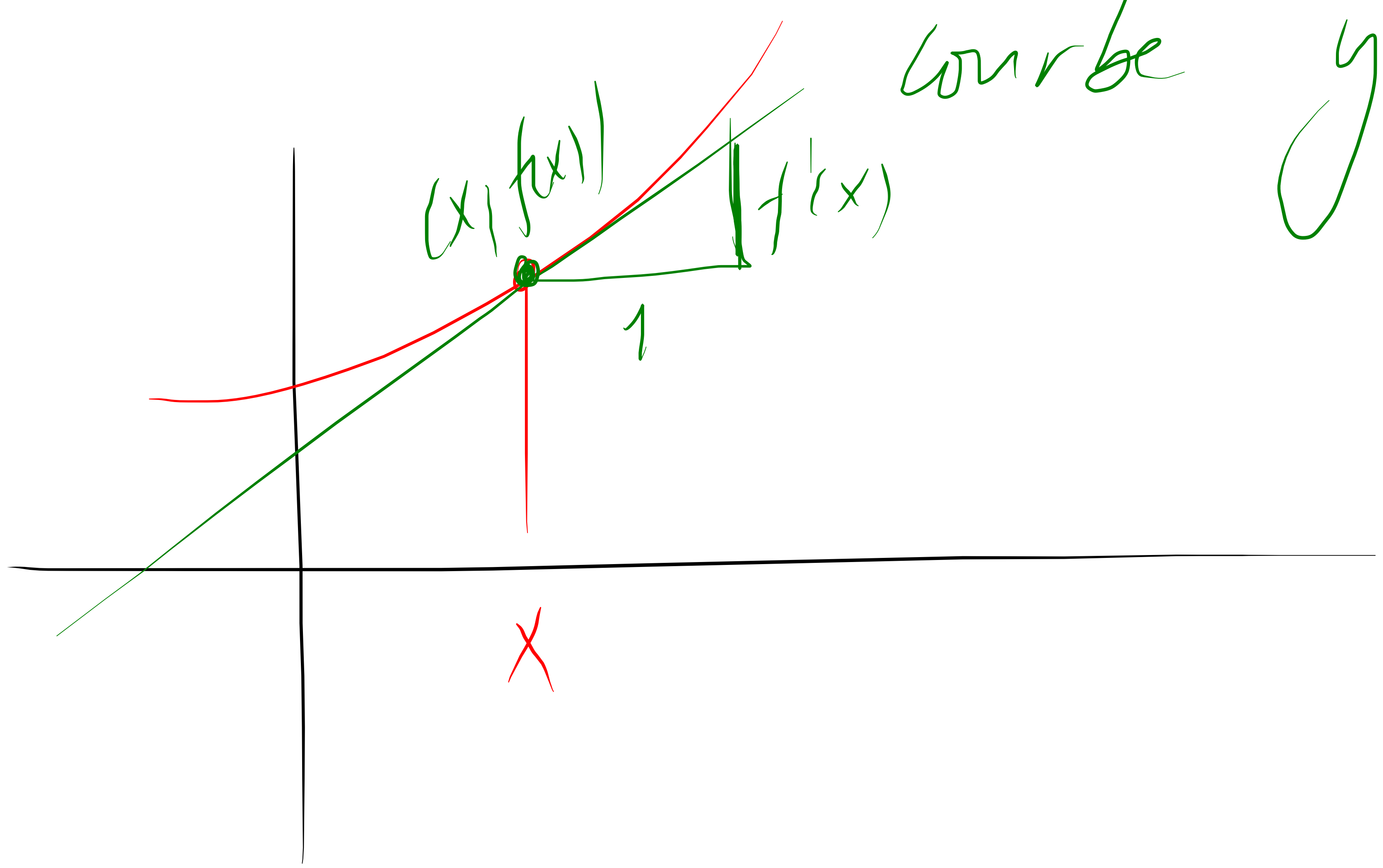
$$f'(x) = -2x - 1$$

O.O. $(0; f(0)) = (0; -2)$

$$\frac{1 \pm \sqrt{1 - 4(-1)\cdot(-2)}}{-2} \in \not{C}$$

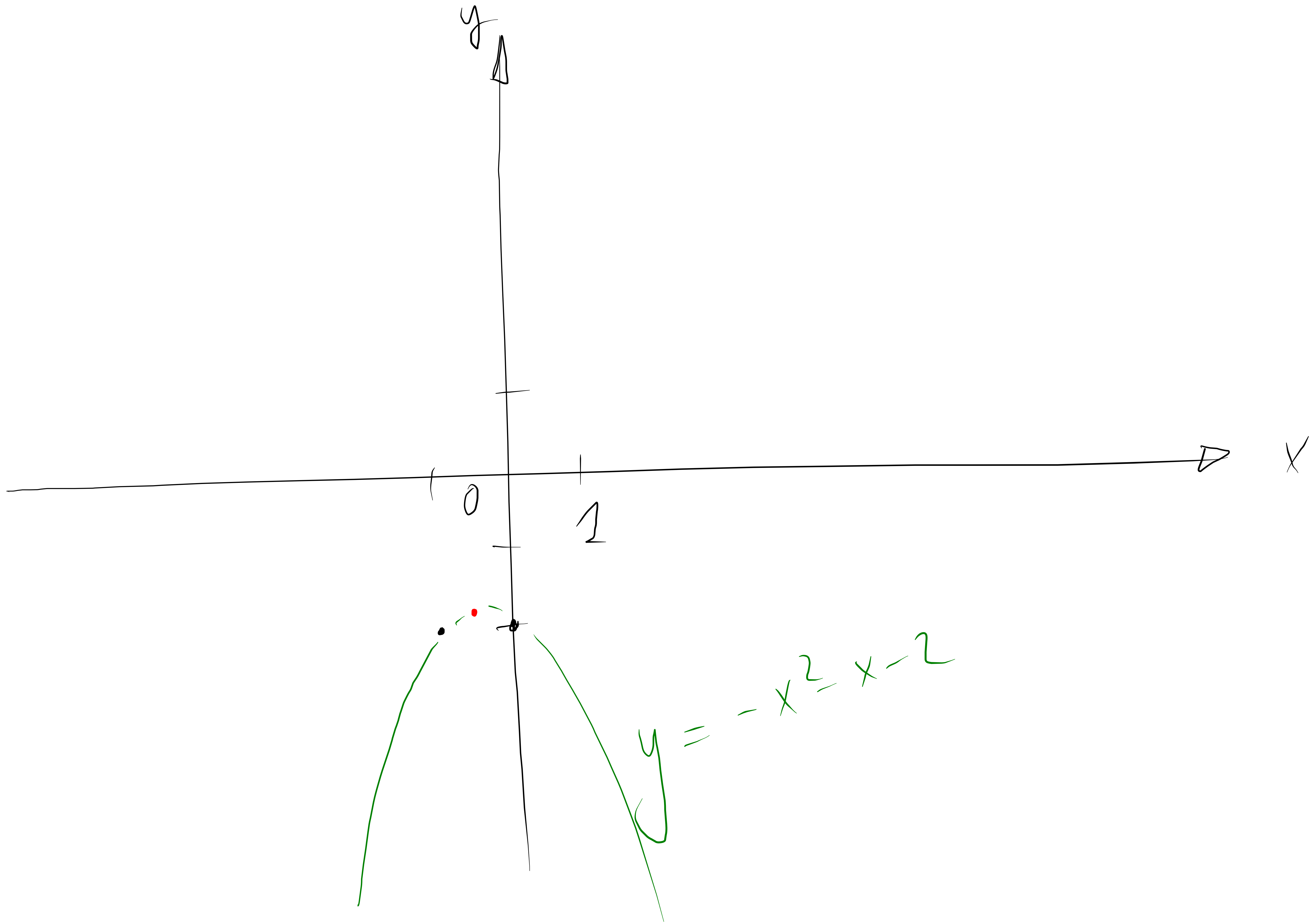


Pente de la tangente à la courbe $y = f(x)$ au point $(x; f(x))$



$$-b/2a$$

$$S = \left(-\frac{1}{2}; -\frac{7}{4}\right)$$


y
x
0
1
$y = -x^2 - x - 2$

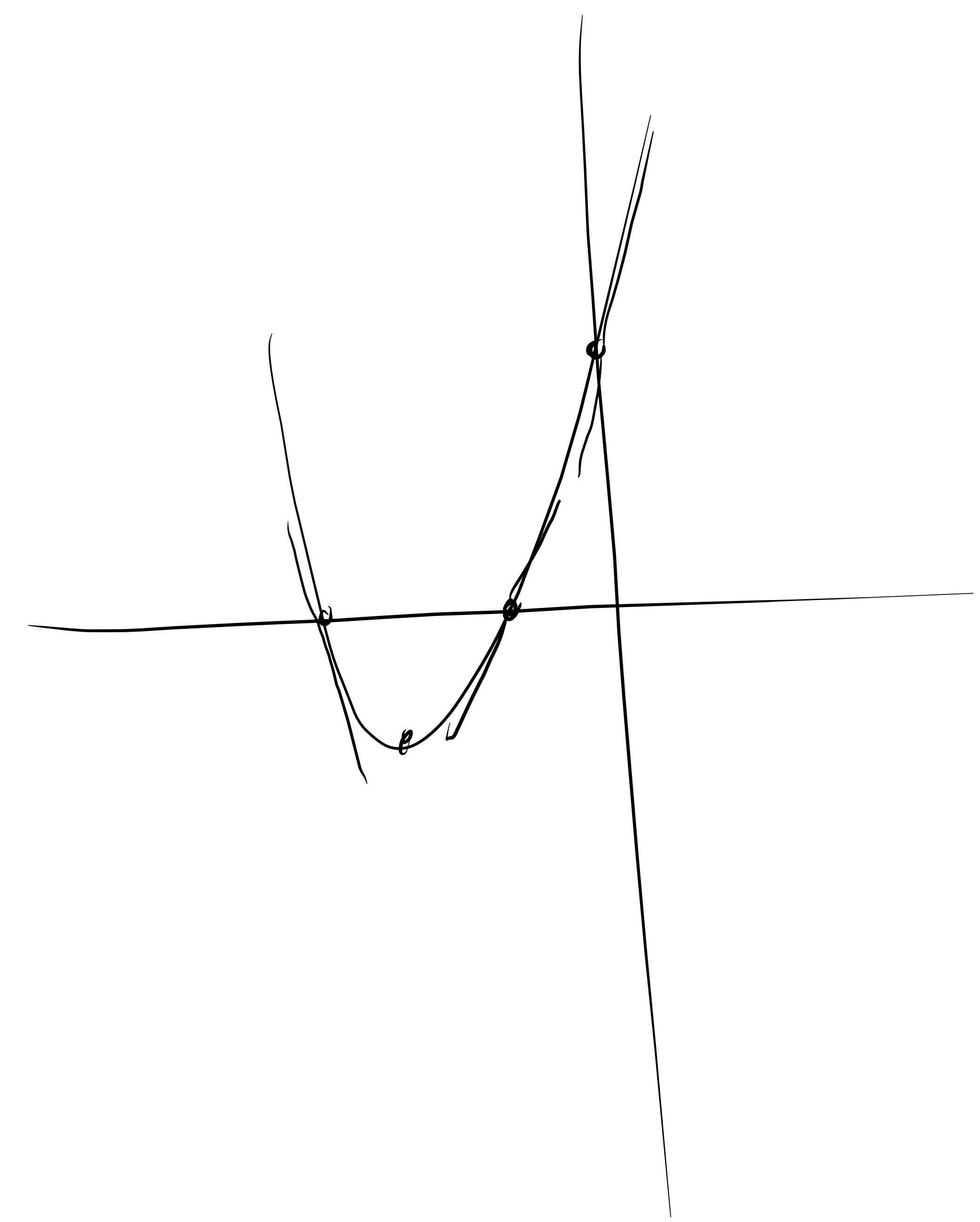
$f(x) = x^2 + 4x + 3$ $\qquad f'(x) = 2x+4$

$f(x)=0 \Leftrightarrow x=-1 \;/\; x=-3$

$(-1;0)$ pente tg. $-2+4=2$

$(-3;0)$ pente tg. -2

$(0;3)$ pente tg. 4



$$\frac{\boxed{3x^2 + 2ax + 2a}}{\boxed{x^2 + ax + a}}$$

$$\left(\frac{f}{g}\right)' = \frac{f'g - fg'}{g^2}$$

$\boxed{2.8.10}$ f)

$$\left(\boxed{(2+x)^2} \cdot \boxed{(1-x)^3} \right)'$$

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

$$= \left[(2+x)^2\right]' \cdot (1-x)^3 + (2+x)^2 \cdot \left[(1-x)^3\right]'$$

$$(f^2)' = 2 f f' \qquad (g^3)' = 3 g^2 \cdot g'$$

$$2AB^3 - 3A^2B^2 = AB^2(2B - 3A)$$

$$= 2(2+x) \cdot 1 \cdot (1-x)^3 + (2+x)^2 \, 3(1-x)^2 \cdot (-1)$$

$$= (2+x)(1-x)^2 \left[2 \cdot (1-x) + (2+x) \cdot 3 \cdot (-1) \right]$$

$$= (2+x)(1-x)^2 (2 - 2x - 6 - 3x)$$

$$= (2+x)(1-x)^2(-5x-4)$$