$$\underline{y} = 3x^2 - 2x + 4$$

$$y' = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h} =$$

$$= \lim_{h \to 0} \frac{3(x+h)^2 - 2(x+h) + 4 - 3x^2 + 2x - 4}{h}$$

$$= \lim_{h \to 0} \frac{3(x^2 + h^2 + 2xh) - 2x - 2h + 4 - 3x^2 + 2x - 4}{h}$$

$$= \lim_{h \to 0} \frac{\cancel{3x^2} + 3h^2 + 6xh - \cancel{2x} - 2h + \cancel{4} - \cancel{3x^2} + \cancel{2x} - \cancel{4}}{h}$$

$$= \lim_{h \to 0} \frac{3h^2 + 6xh - 2h}{h}$$

$$= \lim_{h \to 0} \frac{\cancel{h}(3h + 6x - 2)}{\cancel{h}}$$

$$= \lim_{h \to 0} (3h + 6x - 2)$$

$$= 6x - 2$$

$D = \mathbb{R}$ $\quad D =]-\infty; +\infty[$

$y = -2x^3 + 6x^2 - 8$

	-2	$+6$	0	-8
-1		$+2$	-8	$+8$
	-2	$+8$	-8	0

$y = (x+1)(-2x^2+8x-8)$ $\quad x_{1,2} = 2$

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

$y = -2(x+1)(x-2)^2$

		-1		2	
$x+1$	$-$	0	$+$		$+$
$-2x^2+8x-8$	$-$		$-$	0	$-$
	$+$	0	$-$	0	$-$

		-1		2	
-2	$-$		$-$		$-$
$x+1$	$-$	0	$+$		$+$
$(x-2)^2$	$+$		$+$	0	$+$
	$+$		$-$		$-$

INT. ASSE X

$(-1, 0)$ $\quad (2; 0)$

INT. ASSE Y $(0; -8)$

$y' = -6x^2 + 12x$

$y' = -6x(x-2)$

		0		$+2$	
$-6x$	$+$	0	$-$		$-$
$(x-2)$	$-$		$-$	0	$+$
	$\searrow$	m	$\nearrow$	M	$\searrow$

m $(0; -8)$

M $(2; 0)$

$y'' = -12x + 12$

$y'' = 12(-x+1)$

		1	
12	$+$		$+$
$-x+1$	$+$	0	$-$
	$\cup$		$\cap$

$F(1) = -4$ $\quad (1; -4)$

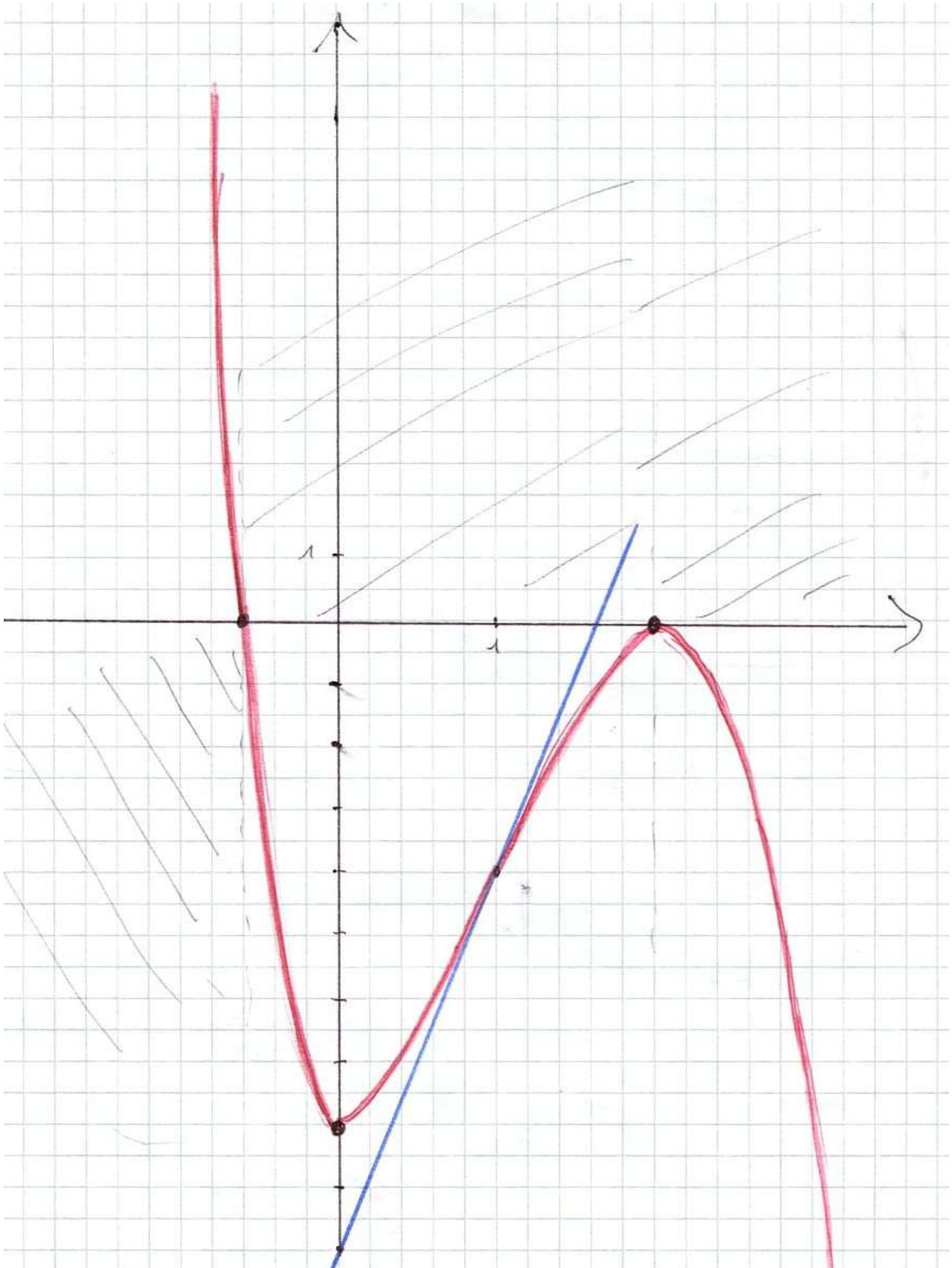
TANG. INFLESS.

$F'(1) = 6$ $\quad -4 = 6(1) + 9$

$-10 = 9$

$y = 6x + 9$

$y = 6x - 10$



1
1

$$y = \frac{5x^2 - 3x + 2}{2x^2 - 5}$$

$$y' = \frac{[(10x - 3) \cdot (2x^2 - 5)] - [(4x) \cdot (5x^2 - 3x + 2)]}{[2x^2 - 5)^2}$$

$$= \frac{(20x^3 - 50x - 6x^2 + 15) - (20x^3 - 12x^2 + 8x)}{(2x^2 - 5)^2}$$

$$= \frac{\cancel{20x^3} - 50x - 6x^2 + 15 - \cancel{20x^3} + 12x^2 - 8x}{(2x^2 - 5)^2}$$

$$= \frac{6x^2 - 58x + 15}{(2x^2 - 5)^2}$$