16/2/2022

282 $(2x^2-4)(3x+1)<0$ $\left[x<-\sqrt{2} \vee -\frac{1}{3}<x<\sqrt{2}\right]$

N_1 N_2

$N_1>0 \quad 2x^2-4>0 \quad 2(x^2-2)>0 \quad x<-\sqrt{2} \vee x>\sqrt{2}$

$x^2-2=0$

$x^2=2 \quad x=\pm\sqrt{2}$

$x_1=-\sqrt{2} \quad x_2=+\sqrt{2}$

$N_2>0 \quad 3x+1>0 \quad 3x>-1 \quad x>-\frac{1}{3}$

	$-\sqrt{2}$		$-\frac{1}{3}$		$\sqrt{2}$	
N_1 $2x^2-4$	+	0	−	−	0	+
N_2 $3x+1$	−	−	0	+		+
	−	0	+	0	−	0	+

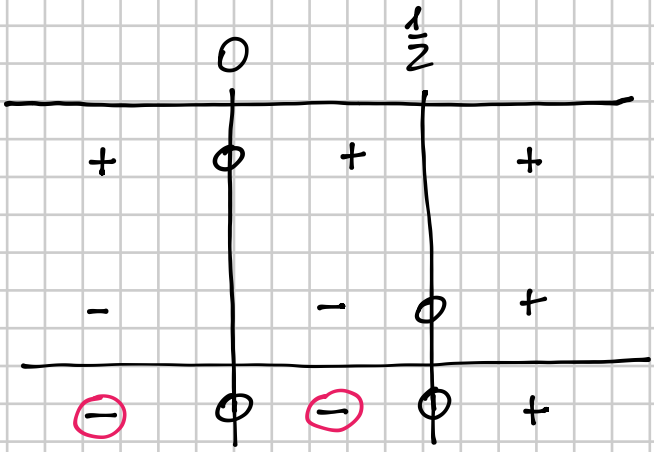
$x<-\sqrt{2} \quad \vee \quad -\frac{1}{3}<x<\sqrt{2}$

299 $2x^2(4x-2)<0$ $\left[x<\frac{1}{2}\wedge x\neq 0\right]$

N_1 N_2

$N_1>0 \quad 2x^2>0 \quad x\neq 0$

$N_2>0 \quad 4x-2>0 \quad x>\frac{1}{2}$



$x<0 \vee 0<x<\frac{1}{2}$

o equivalentemente

$x<\frac{1}{2} \wedge x\neq 0$

x minore di $\frac{1}{2}$, ma x diverso da 0

342 $x^3 - 2x^2 + 1 > 0$

$1 \mapsto 1^3 - 2\cdot 1^2 + 1 = 1 - 2 + 1 = 0$

	1	−2	0	1
1		1	−1	−1
	1	−1	−1	//

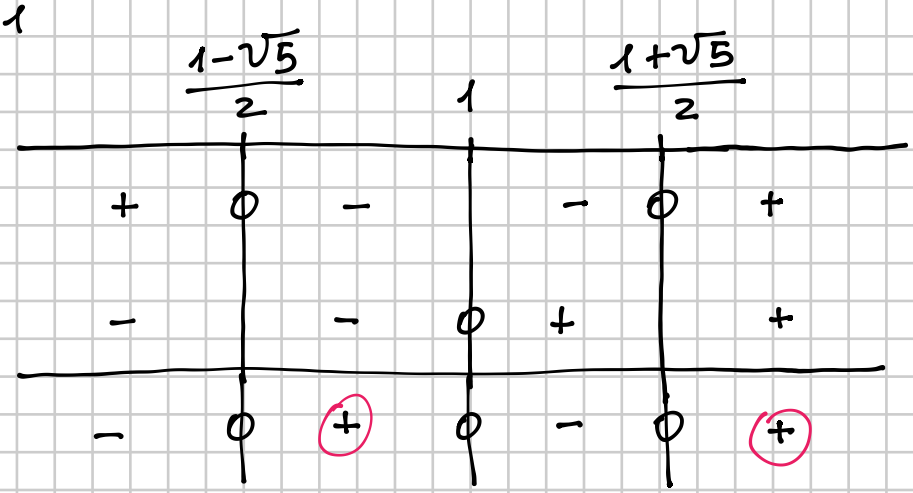
$$(x^2 - x - 1)(x - 1) > 0$$
$$N_1 \qquad N_2$$

$N_1 > 0 \quad x^2 - x - 1 > 0 \quad \rightarrow \quad x^2 - x - 1 = 0$

$$x = \frac{1 \pm \sqrt{1+4}}{2} = \frac{1 \pm \sqrt{5}}{2}$$

$$x < \frac{1-\sqrt{5}}{2} \quad \vee \quad x > \frac{1+\sqrt{5}}{2}$$

$N_2 > 0 \quad x - 1 > 0 \quad x > 1$



$$\frac{1-\sqrt{5}}{2} < x < 1 \quad \vee \quad x > \frac{1+\sqrt{5}}{2}$$

386 $\dfrac{(x+3)^3}{(x^2-x)(4-x^2)} \geq 0$

N_1 D_1 D_2 $[x \leq -3 \vee -2 < x < 0 \vee 1 < x < 2]$

$N_1 > 0 \quad (x+3)^3 > 0 \quad x+3 > 0 \quad x > -3$

$D_1 > 0 \quad x^2 - x > 0 \rightarrow x^2 - x = 0 \quad x < 0 \ \vee \ x > 1$

$x(x-1) = 0$

$x = 0 \quad x = 1$

$D_2 > 0 \quad 4 - x^2 > 0 \quad x^2 - 4 < 0 \quad -2 < x < 2$

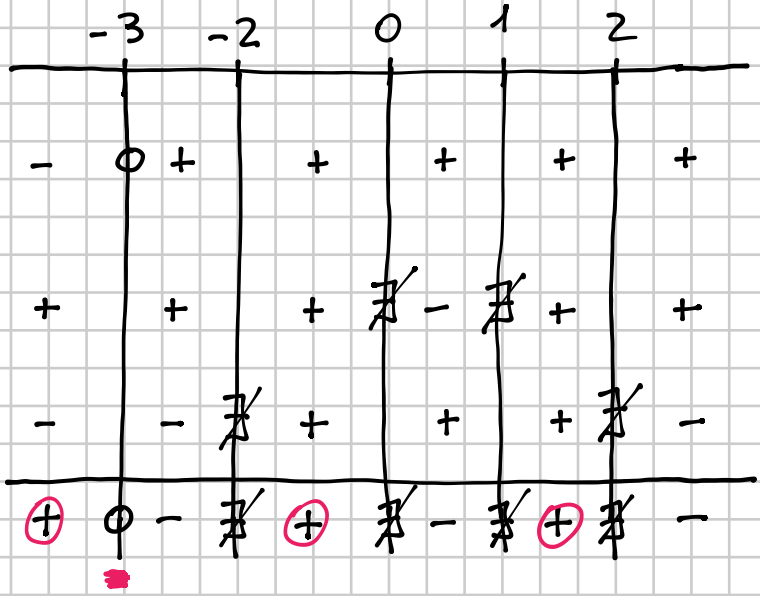
$x_1 = -2$

$x_2 = 2$

$N_1 \quad (x+3)^3$

$D_1 \quad x^2 - x$

$D_2 \quad 4 - x^2$



$x \leq -3 \ \vee \ -2 < x < 0 \ \vee \ 1 < x < 2$