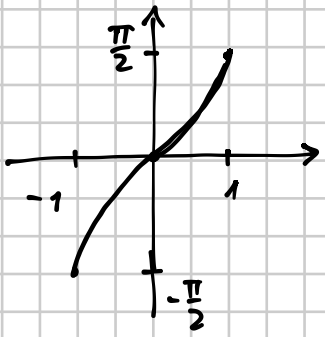
PAG. 1372

297 $y = \dfrac{\arcsin x}{\sqrt{1-4x^2}}$ $\left[0 < x < \frac{1}{2}\right]$

$\arcsin x$

$D = [-1, 1]$

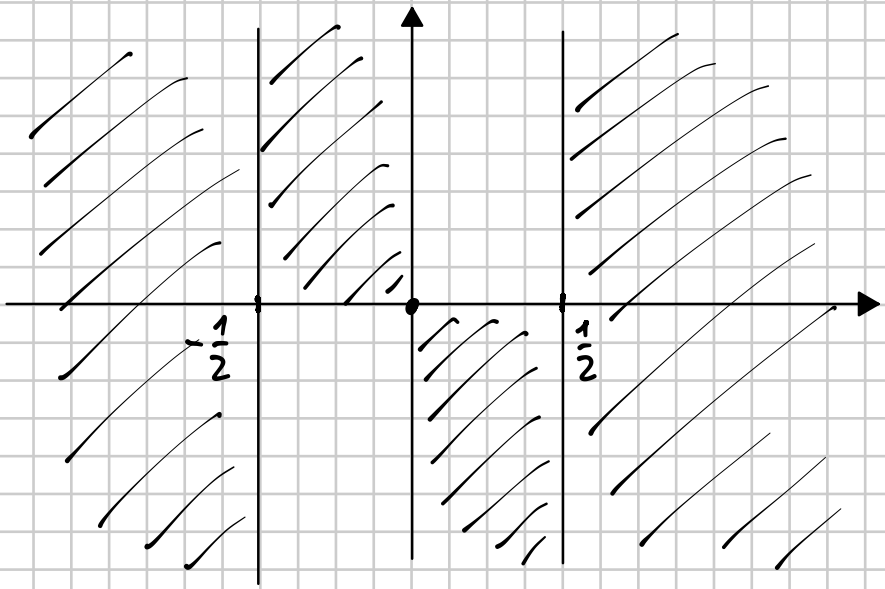


$\begin{cases} -1 \le x \le 1 \\ 1 - 4x^2 > 0 \end{cases}$

1) DOMINIO

$1 - 4x^2 > 0 \qquad 4x^2 - 1 < 0 \qquad x = \pm\frac{1}{2} \qquad -\frac{1}{2} < x < \frac{1}{2}$

$\begin{cases} -1 \le x \le 1 \\ -\frac{1}{2} < x < \frac{1}{2} \end{cases} \Rightarrow -\frac{1}{2} < x < \frac{1}{2} \qquad D = \left]-\frac{1}{2}, \frac{1}{2}\right[$

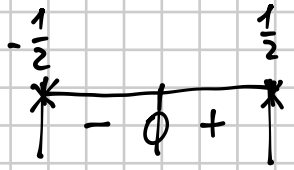


2) ZERI

$\dfrac{\arcsin x}{\sqrt{1-4x^2}} = 0 \Rightarrow \arcsin x = 0 \Rightarrow x = 0 \qquad O(0,0)$

3) SEGNO

$\dfrac{\arcsin x}{\sqrt{1-4x^2}} > 0 \Rightarrow \arcsin x > 0 \Rightarrow 0 < x < \frac{1}{2}$



17/9/2020 DOMINIO, INTERS., SEGNO

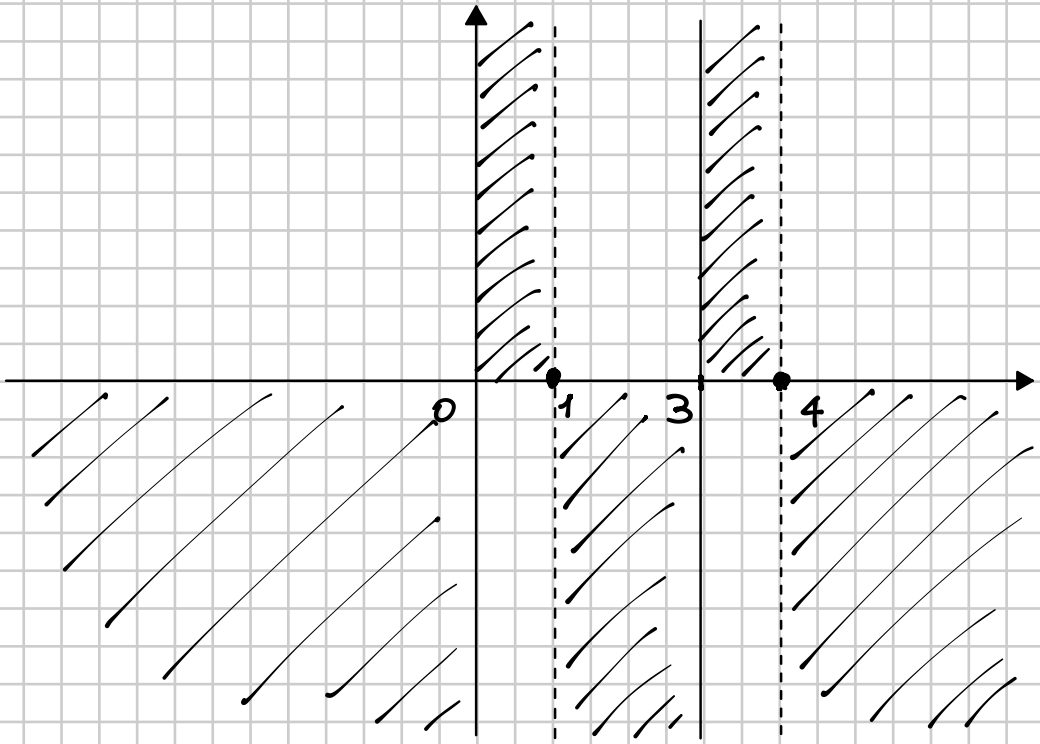
Pg. 1371

279 $y = \dfrac{x^2 - 5x + 4}{x^2 - 3x}$ $[x < 0 \vee 1 < x < 3 \vee x > 4]$

1) DOMINIO

$x^2 - 3x \neq 0 \qquad x(x-3) \neq 0 \Rightarrow x \neq 0 \wedge x \neq 3$

$D =]-\infty, 0[\cup]0, 3[\cup]3, +\infty[$



2) INTERSEZ. ASSI (ZERI)

ZERI (INT. ASSE x)

$$\begin{cases} y = \dfrac{x^2 - 5x + 4}{x^2 - 3x} \\ y = 0 \end{cases} \Rightarrow \frac{x^2 - 5x + 4}{x^2 - 3x} = 0$$

$x^2 - 5x + 4 = 0 \qquad (x-4)(x-1) = 0$

$x = 4 \vee x = 1$

$A(1,0) \quad B(4,0)$ INT. ASSE x

Non ci sono intersezioni con l'asse y perché $x = 0$ è fuori dal dominio

3) SEGNO

$$\frac{x^2-5x+4}{x^2-3x} > 0 \qquad \frac{(x-1)(x-4)}{x(x-3)} > 0$$

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

$x-4>0 \quad x>4$

$x>0 \quad x>0$

$x-3>0 \quad x>3$

	0	1	3	4	
$x-1$	−	−	0 +	+	+
$x-4$	−	−	−	−	0 +
x	−	X +	+	+	+
$x-3$	−	−	−	X +	+
	+	X −	0 +	X −	0 +