

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

$$a) D(f) = \mathbb{R}$$

→ FUNCIÓN  
POLINÓMICA

CORTE EJE X ( $f(x) = 0$ )

$$x^3 - 3x^2 - x + 3 = 0$$

$$\begin{array}{r|rrrr} 1 & 1 & -3 & -1 & 3 \\ & & 1 & -2 & -3 \\ \hline & 1 & -2 & -3 & 0 \end{array}$$

$$x^2 - 2x - 3 = 0$$

$$x = \frac{-(-2) \pm \sqrt{(-2)^2 - 4 \cdot 1 \cdot (-3)}}{2 \cdot (1)} = \frac{2 \pm \sqrt{16}}{2} =$$

$$= \frac{2 \pm 4}{2} = \begin{cases} \frac{2+4}{2} = 3 \\ \frac{2-4}{2} = -1 \end{cases}$$

$(1,0); (3,0); (-1,0)$

CORTE EJE Y ( $x=0$ )

$$f(0) = 3$$

$(0,3)$

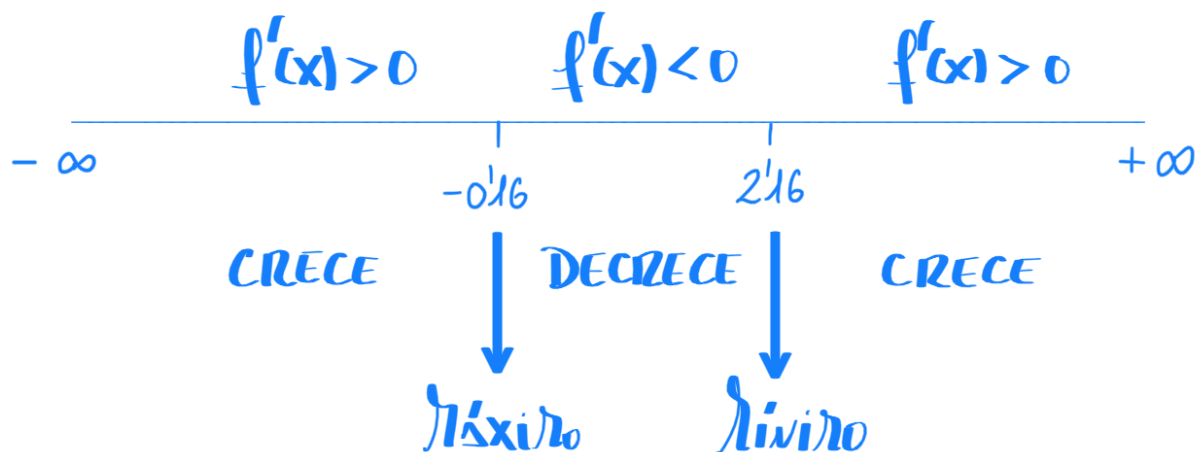
b) ΜΟΝΟΤΟΝΙΑ - ΜΑΧΙΜΟΣ Υ ΜΙΝΙΜΟΣ

$$f'(x) = 3x^2 - 6x - 1$$

$$3x^2 - 6x - 1 = 0$$

$$x = \frac{-(-6) \pm \sqrt{(-6)^2 - 4 \cdot 3 \cdot (-1)}}{2 \cdot 3} = \frac{6 \pm \sqrt{48}}{6} =$$

$$\frac{6 \pm 6'93}{6} = \begin{cases} 2'16 \\ -0'16 \end{cases}$$



$$\boxed{(-0'16, 3'08) \quad (2'16, -3'08)}$$

$$\uparrow \\ f(-0'16)$$

$$\uparrow \\ f(2'16)$$

