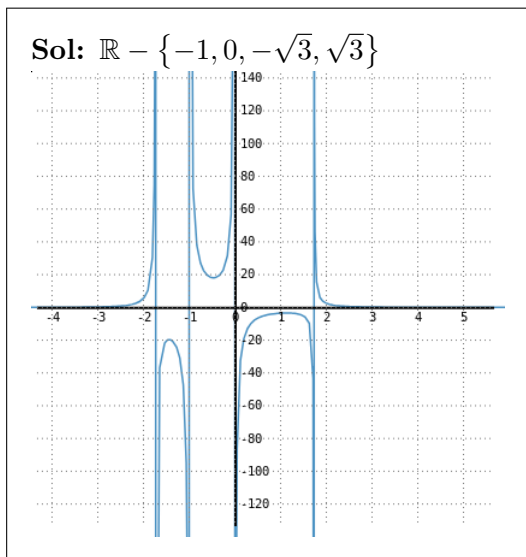


1. Calcular el dominio de las siguientes funciones:

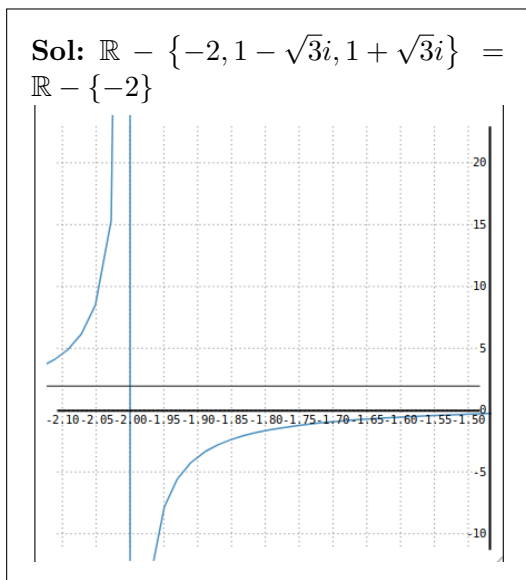
(a)  $f(x) = \frac{x+13}{x^4+x^3-3x^2-3x}$



(b)  $f(x) = x^6 + x^2 - 2$

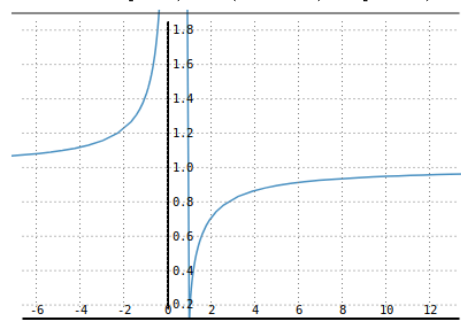
**Sol:**  $\mathbb{R} - \emptyset$

(c)  $f(x) = \frac{7x+9}{x^3+8}$



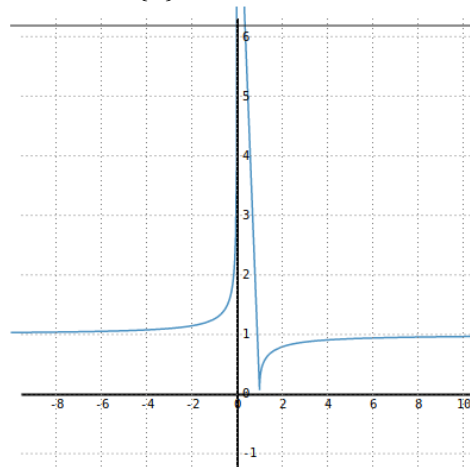
(d)  $f(x) = \sqrt{\frac{x-1}{x}}$

**Sol:**  $\mathbb{R} - [0, 1) = (-\infty, 0) \cup [1, \infty)$



(e)  $f(x) = \sqrt[3]{\frac{x-1}{x}}$

**Sol:**  $\mathbb{R} - \{0\}$

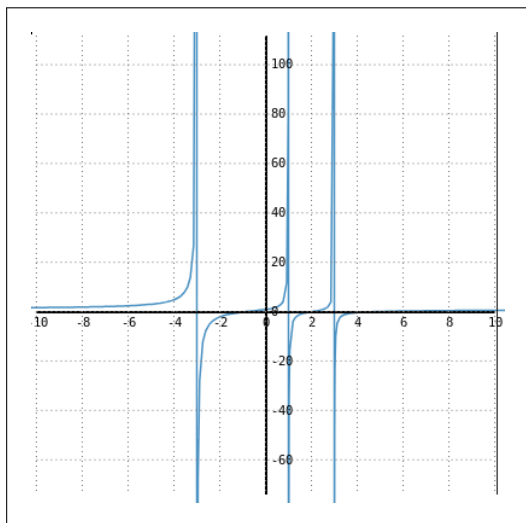


(f)  $f(x) = \sqrt[4]{\frac{x(x+7)}{x^2+5x+6}}$

**Sol:**

(g)  $f(x) = \frac{x^3 - 6x^2 + 4x + 8}{x^3 - x^2 - 9x + 9}$

**Sol:**  $\{-3, 1, 3\}$



(h)  $f(x) = \frac{1}{4x^2 - 1}$

**Sol:**

(i)  $f(x) = \frac{1}{\sqrt[4]{9 - x^2}}$

**Sol:**

(j)  $f(x) = \frac{2x + 7}{\sqrt[3]{9 - x}}$

**Sol:**

(k)  $f(x) = \frac{x^2 - 5x + 6}{\sqrt{x^4 - 1}}$

**Sol:**

(l)  $f(x) = \sqrt{-2x^2 + 5x - 3}$

**Sol:**

(m)  $f(x) = \frac{x^2 - 3}{x^3 - 2x^2 - x + 2}$

**Sol:**

(n)  $f(x) = \frac{5x^3 - 8}{1 + x + x^2}$

**Sol:**

(ñ)  $f(x) = \frac{x - 1}{x^4 - 7x^2 - 144}$

**Sol:**

(o)  $f(x) = \frac{7x + 9}{81x^4 - 16}$

**Sol:**

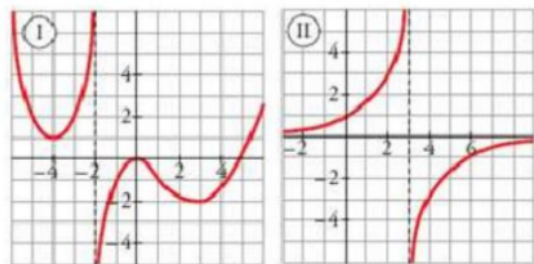
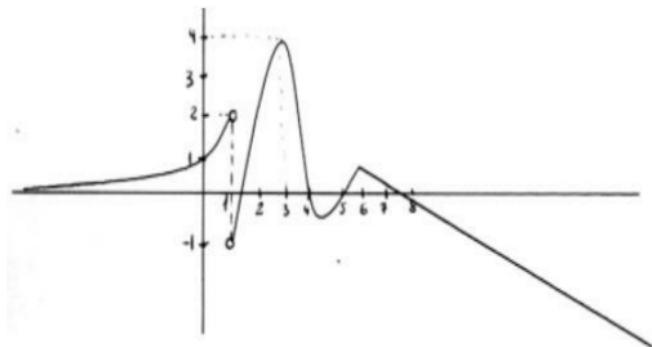
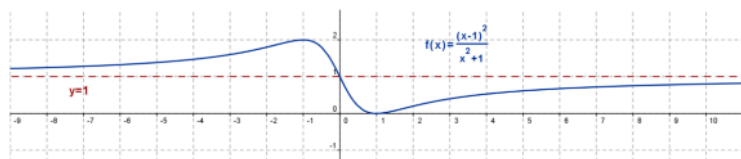
(p)  $f(x) = \sqrt[3]{\frac{x^6 - 5x + 1}{x^2 - 4x + 4}}$

**Sol:**

(q)  $f(x) = \frac{\sqrt{x^2 - 4x - 5}}{x^2 + 2x + 1}$

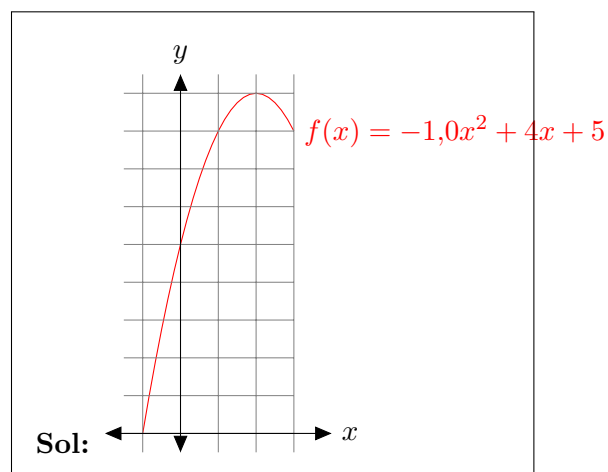
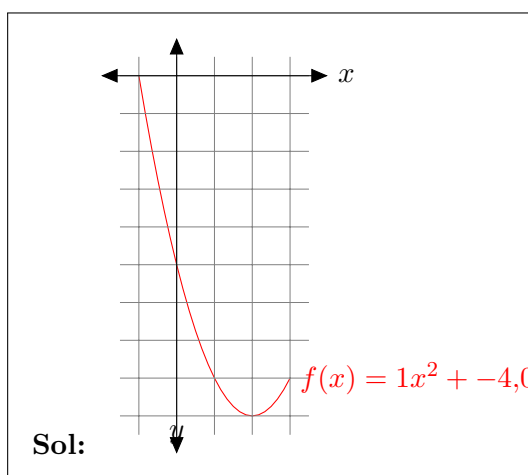
**Sol:**

2. Dadas las siguientes funciones, dadas por sus gráficas, obtén sus propiedades:



3. Representa las siguientes funciones, indicando sus propiedades:

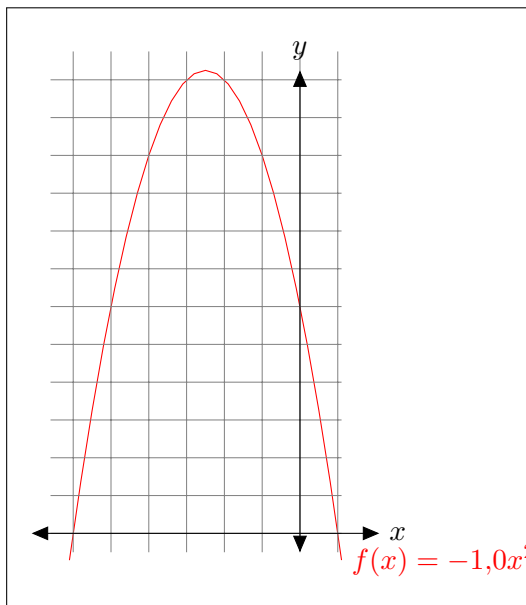
(a)  $y = x^2 - 4x - 5$



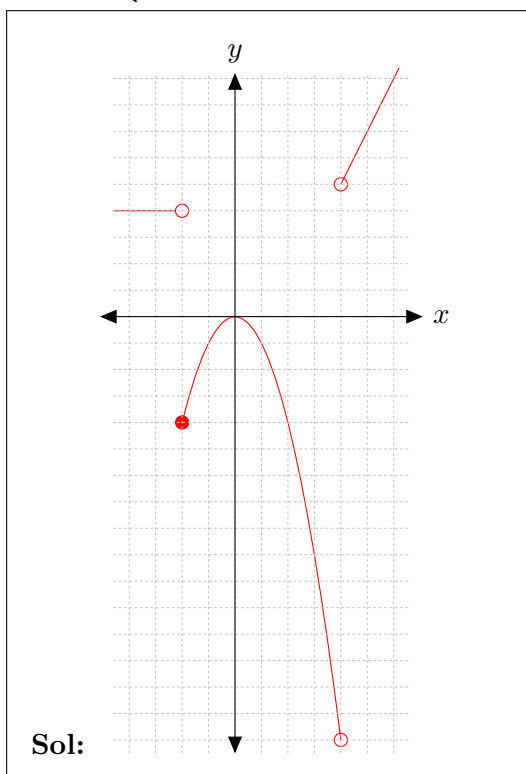
(c)  $y = -x^2 - 5x + 6$

(b)  $y = -x^2 + 4x + 5$

**Sol:**

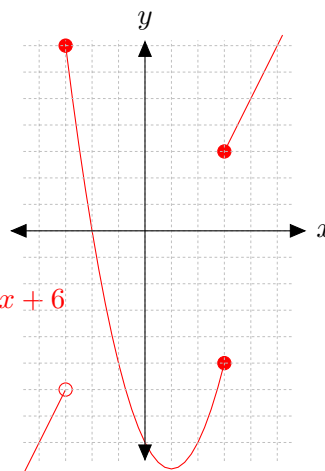


$$(d) \quad f(x) = \begin{cases} 4 & \text{si } x < -2 \\ -x^2 & \text{si } -2 \leq x < 4 \\ 2x - 3 & \text{si } x \geq 4 \end{cases}$$



$$(e) \quad f(x) = \begin{cases} 2x & \text{si } x < -3 \\ x^2 - 2x - 8 & \text{si } -3 \leq x \leq 3 \\ 2x - 3 & \text{si } x \geq 3 \end{cases}$$

**Sol:** Nótese, que en este caso la definición no sería una función ( $x = 3$  tiene dos imágenes)



$$(f) \quad f(x) = \begin{cases} x + 1 & \text{si } x \leq 0 \\ x^2 - 4x + 3 & \text{si } x > 0 \end{cases}$$

