1. Calcular el dominio de las siguientes funciones:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

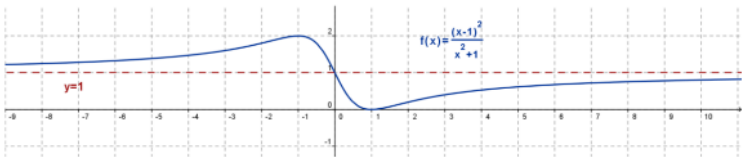
(ñ) $f(x) = \dfrac{x-1}{x^4-7x^2-144}$

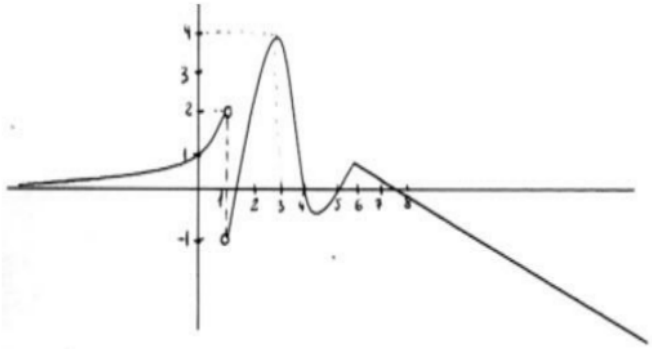
(o) $f(x) = \dfrac{7x+9}{81x^4-16}$

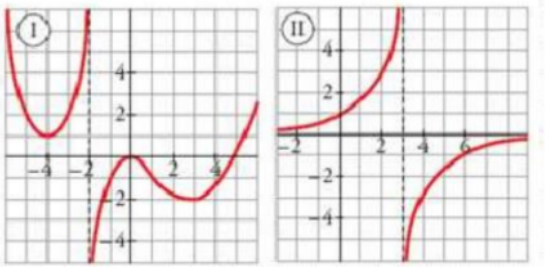
(p) $f(x) = \sqrt[3]{\dfrac{x^6-5x+1}{x^2-4x+4}}$

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

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







3. Representa las siguientes funciones, indicando sus propiedades:

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

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

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

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

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

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