

Práctico N° 12

(I) Resolver en \mathbb{R}

i) $-5x + 3 \geq 0$

ii) $3x + 1 < 2x - 3$

iii) $\frac{2x+1}{3} < \frac{3x+2}{7}$

iv) $3x + 1 \geq x(x - 1) + 4$

v) $(3x + 7)(x + 1) > 0$ vi) $x^2(x^2 - 9) \leq 0$

(II) Resolver en \mathbb{R}

i) $\frac{x^2 - 4x + 3}{x + 2} \geq 0$

ii) $\frac{-2x(x + 3)}{(x + 1)(x - 2)} < 0$

iii) $\frac{(3x + 4)^2(2x - 3)}{(x - 1)^3(x - 2)} \geq 0$

iv) $\frac{(-2x - 1)^{18}(4x - 14)}{(3x - 9)^{32}(-x - 2)^{57}} \leq 0$

v) $\frac{(-x^2 - 3x - 5)^3(x^2 + 9)x^2}{(-2x^6 - 2x^4)(-5 - x^2)} \leq 0$

vi) $\frac{-3(-x^2 + 3x + 10)^4}{(x^2 + 2)(-5x^2 - 3)} < 0$

vii) $\frac{(3x - 2x^2)(2x^2 - x - 1)}{x^3(x^2 - 2)} \leq 0$

viii) $\frac{(x^2 + 8x + 16)^6}{(x^2 + x + 3)(-8 - x^2)^4} \leq 0$

ix) $\frac{(3 - 2x)^3(2x - 3)}{(8x^2 + x + 1)(x^2 + 3)} \geq 0$

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

xi) $\frac{x - 3}{x - 2} \leq \frac{x}{1 - x}$

xii) $\frac{x^3 + 5x^2 - 6x + 3}{x^3 + 2x} \geq 1$

xiii) $\frac{-1}{(x + 4)x} \leq 0$

xiv) $\frac{x^4 - 13x^2 + 36}{x^4 - 3x^2 + 2} \leq 0$

xv) $\frac{x^4 + 2x^2 + 1}{x^2 + 6x + 9} < 0$

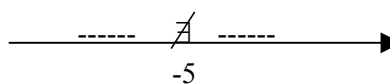
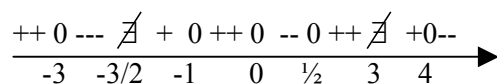
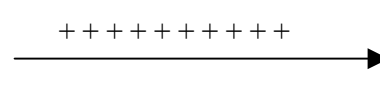
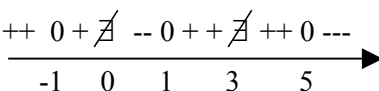
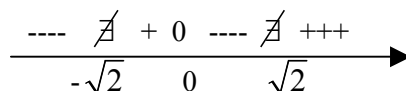
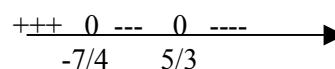
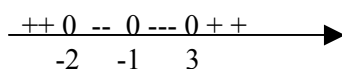
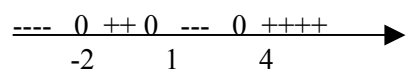
xvi) $\frac{\sqrt{x + 3}}{x^2 - x - 6} \geq 0$

xvii) $\frac{x\sqrt{x + 3}}{x^2 + x - 6} \geq 0$

xviii) $\frac{\sqrt{x^2 - 1}}{(x - 3)\sqrt{x^3 - x}} < 0$

xix) $\frac{\sqrt[3]{x^2 - 4}\sqrt{x + 3}}{x^2 - 9} < 0$

(III) Escribir una función cuyo estudio de signo sea:

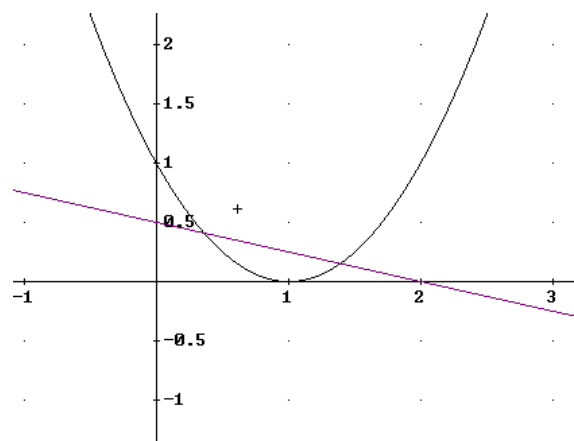


(IV) Escribir una inecuación cuya solución sea:

$S_1 = \{x \in \mathbb{R} / x = -3, -2 < x < 1, x > 5\}$ $S_2 = \{x \in \mathbb{R} / -4 < x < -1, 3 < x\}$

$S_3 = \{x \in \mathbb{R} / x < -1, 2 \leq x \leq 5\}$ $S_4 = \mathbb{R}$ $S_5 = \emptyset$ $S_6 = \mathbb{R}^*$ $S_7 = \{2\}$

(V) Dados los polinomios de primer grado g(x) y de 2° grado f(x) cuyo gráfico es:



- a) Determinar f(x) y g(x).
- b) Resolver gráfica y analíticamente $f(x) = g(x)$
- c) Resolver $f(x) - g(x) > 0$