



EQUATIONS AND FUNCTIONS

3º ESO



Exercise 1: (1.75 ptos) Find the domain of the following functions:

a) $f(x) = \frac{x^2 - 9}{x^2 - 5x - 6}$

b) $f(x) = \sqrt{x-9}$

c) $f(x) = \frac{\sqrt[3]{2x+3}}{\sqrt[4]{x+2}}$

Exercise 2: (3.5 ptos)

- a) Find the equation of the straight line with a slope $m = -2$ that goes through the point $Q(4, -1)$
- b) Find the **general** equation of a straight line that goes through the points $A(-4, 2)$ and $B(5, 4)$
- c) Given the straight line $7x + 2y - 1 = 0$ find the values of the slope and the y-intercept
- d) Find a straight line that's parallel to $4x - 7y - 1 = 0$ and goes through the point $P(5, -1)$

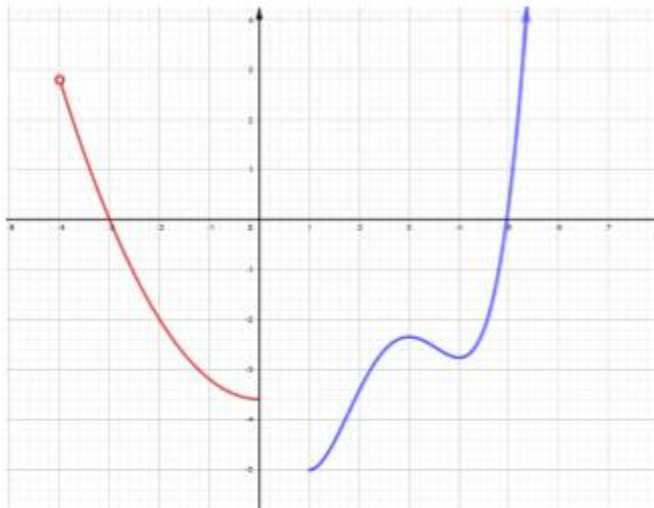
Exercise 3: (3 ptos) Solve and factorize the following polynomials:

a) $P(x) = x^4 - 6x^3 + 9x^2 + 4x - 12$

b) $Q(x) = x^5 - x^4 + 4x^3 - 4x^2$

c) $R(x) = x^4 + 6x^3 + 13x^2 + 12x + 4$

Exercise 4: (1.75 ptos) Given the graph of a certain function:



- a) Indicate its domain and its image
- b) Indicate the points where the function crosses the axes
- c) Study its monotony
- d) Study the extrema

