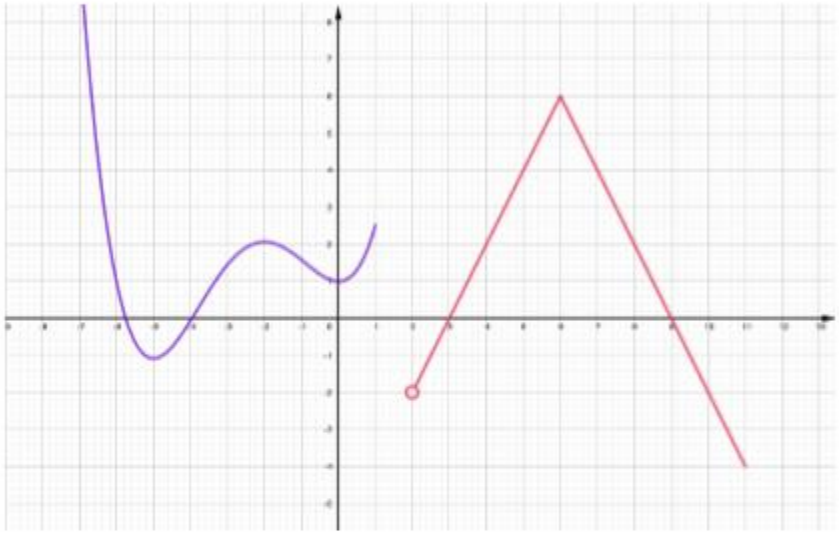
EQUATIONS AND FUNCTIONS

3º ESO

Exercise 1: (0.5 ptos) Plot a graph that doesn't represent a function.

Exercise 2: (3 points) Given the graph of the following function, indicate its domain and image, the points where it crosses the axes, study its monotony and the relative and absolute extrema



Exercise 3: (2 ptos) Find the domain of the following functions:

a) $f(x)=\dfrac{x^2+3x-1}{x^2-9}$ (0.75)

b) $f(x)=\sqrt[78]{x+5}$ (0.5)

c) $f(x)=\dfrac{x}{\sqrt{x-7}}$ (0.75)

Exercise 4: (3.75 points) Given the following polynomials, find their roots and factorization:

a) $P(x)=x^5-26x^3+25x$

b) $P(x)=x^4+11x^3+41x^2+61x+30$

c) $P(x)=x^5-4x^4+5x^3-2x^2$

Exercise 5: (0.75 points) Find the value of k so that when dividing $P(x)=kx^3-5x^2+3x-7$ by $(x-2)$ the remainder is 19