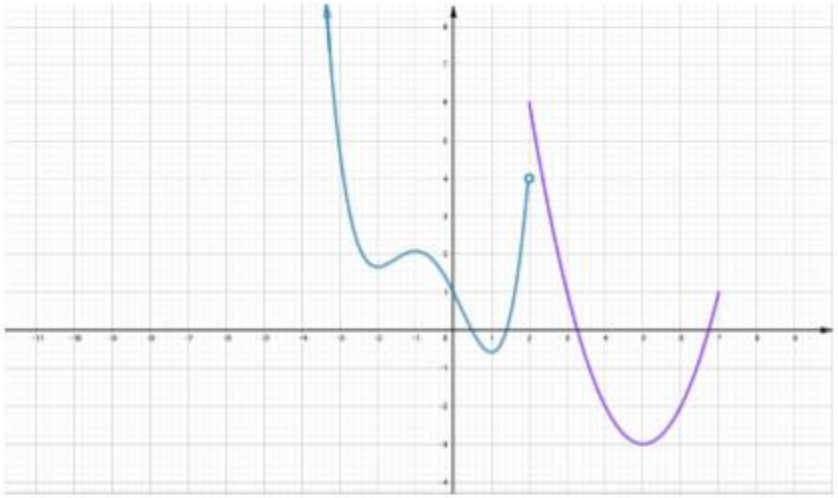
THIRD TERM GLOBAL TEST

3º ESO

Exercise 1: (2 points) Given the following graph of a certain function:



a) Indicate its domain and its image
b) Study its monotony
c) Study the relative and absolute extrema

Exercise 2: (1.5 points) Find the domain of the following functions:

a) $f(x)=\dfrac{5x-1}{x^3-5x^2-6x}$ (1)

b) $f(x)=\dfrac{1+x^2}{\sqrt{x+3}}$ (0.5)

Exercise 3: (2 points)

a) Find the **general** equation of the line that goes through the points $P(-2,7)$ and $Q(5,4)$ (1.25)

b) Find a parallel line to $7x-3y-2=0$ going through the point $A(-1,5)$. Indicate also its slope and y-intercept (of the parallel line). (0.75)

Exercise 4: (2.5 points) Factorize the following polynomials and indicate their roots:

a) $P(x)=x^4-x^3-8x^2+12x$ (1)

b) $P(x)=x^3-5x^2+x-5$ (0.75)

c) $R(x)=x^4-13x^2+36$ (0.75)

Turn the page around → → →

Exercise 5: (2 points) Plot graph of the function $f(x)=\begin{cases}5 & x<-2\\ x^2-2x-3 & -2\le x<2\\ x-1 & 2<x\le 8\end{cases}$