THIRD TERM GLOBAL TEST

3º ESO

Exercise 1: (1 point) Find the value of k so that when dividing $P(x)=kx^3-5x^2+3x-7$ by $(x-2)$ the remainder is 19

Exercise 2: (2.25 points) Factorize the following polynomials and indicate their roots:
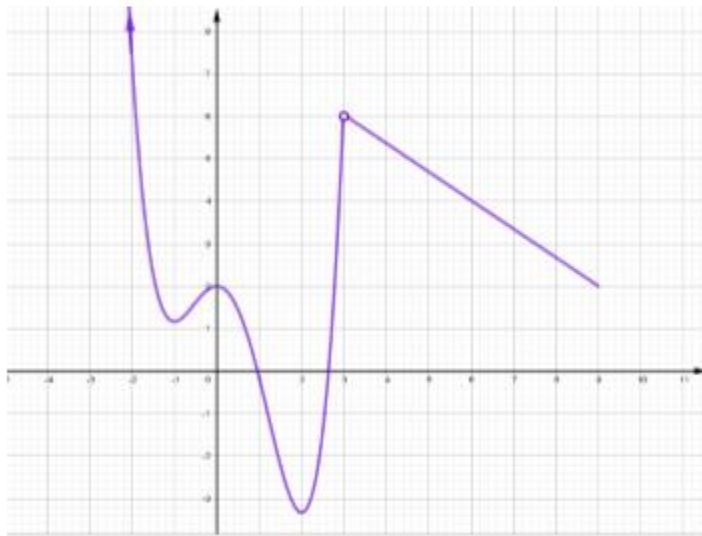
a) $Q(x)=x^4+7x^3+16x^2+12x$ (1)

b) $P(x)=x^5-x^4-17x^3+17x^2+16x-16$ (1.25)

Exercise 3: (1.5 points) Find the domain of the following functions:

a) $f(x)=\dfrac{2x+5}{x^3-6x^2-7x}$ (1)

b) $f(x)=\dfrac{x^2-4}{\sqrt{x-9}}$ (0.5)

Exercise 4: (1.5 points) Given the graph of a certain function:

a) Find its domain and its image

b) Study its monotony

c) Study the extrema

Exercise 5: (2 points) Plot graph of the function $f(x)=\begin{cases} x^2+6x+8 & x<-1 \\ 2x+5 & -1<x<4 \end{cases}$

Exercise 6: (1.75 points)

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

b) Find a parallel line to $2x-7y-9=0$ going through the point $P(-2,4)$ (0.5)