GLOBAL TEST - 3º ESO

Exercise 1: (1 pto) This table represents the values of a certain random variable. Find Pearson's coefficient of variation

x_i	0	1	2	3
f_i	5	9	7	4

Exercise 2: (1.25 ptos) Work out:

a) $\sqrt[7]{a^2}\cdot\sqrt{a^{-1}}:\sqrt[3]{a^{-5}}=$ (0.5)

b) $x^2+(2x-5)^2=10$ (0.75)

Exercise 3: (0.75 ptos) Find the value of *k* so that when dividing $P(x)=x^3-kx^2+7x-5$ by $(x-2)$ the remainder is 1

Exercise 4: (1.75 ptos) Factorize the following polynomials and indicate their roots:

a) $P(x)=x^4-13x^2+36$ (0.75)

b) $P(x)=x^4+5x^3+8x^2+4x$ (1)

Exercise 5: (1 pto) Find the axial diagonal and the area of a cuboid with sides of lengths 10 cm, 12 cm and 15 cm

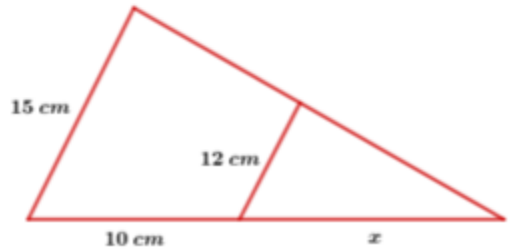
Exercise 6: (2 ptos)

a) Find the general equation of the line that goes through the points $P(-1,4)$ and $Q(1,6)$ (0.75)

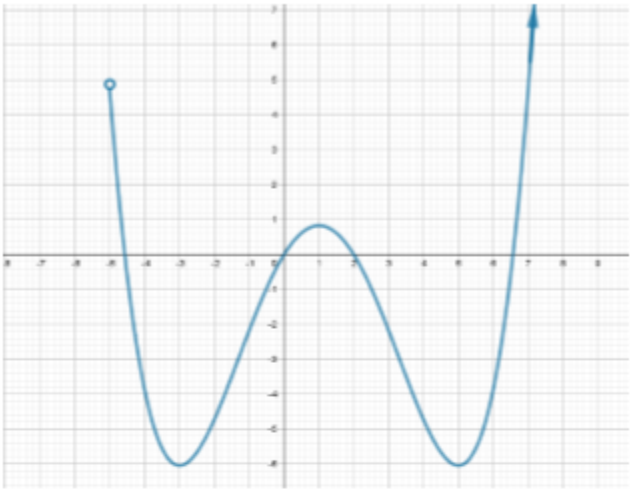
b) Plot the following piecewise function, studying all the characteristics of the parabola:

$$f(x)=\begin{cases}5 & x\le 1\\ x^2-6x+8 & x>1\end{cases}$$ (1.25)

Exercise 7: (0.75 ptos) Find the value of x:



Exercise 8: (1.5 ptos) Given the following graph of a certain function:



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