PROPORTION AND STATISTICS TEST

3º ESO

Exercise 1: (1.25 points)

a) A couple bought a car whose initial price was of 13500€, but the seller was offering a 15% discount and the car's company, another 7.5% discount. What's the final price of the car? 10614.38€

b) The price of a kilo of coffee was of 2.7€ at the beginning of the year, but due to the drought, it was increased by 75% during the summer. Yup, I'm crying. Now things seem to go better and the price has gone down, 40%. How much will I have to pay now? Do I need to ask the bank for a loan? 2.84€

Exercise 2: (1.25 points) Seventeen men need to work for a week to install the 1.6 million of Christmas lights in the city. How many days would twenty men have to work in order to install 2 million lights in another city? Round the answer to days and hours. 7 days and 11 hours

Exercise 3: (1.25 points) Split 2431€ in an inversely proportional way to 5, 7 and 9

$x = 1071€$ $y = 765€$ $z = 595€$

Exercise 4: (0.75 points) The price of milk has increased by 57% due to the war and some other factors. If a liter costs now 0.91€, what was the original price? 0.58€

Exercise 5: (1 point) I want to know if Christmas cactuses will really bloom at the beginning of winter, or if they are changing their cycles due to climate change. Last month I went to a flower store, I bought 10 plants and I have them there by the window waiting for the flowers to appear.
Indicate the population, the sample, classify the random variable and tell me if my survey is a good one or I got it all wrong again.

Population: all the Christmas cactuses in the Northern Hemisphere
Sample: 10 Christmas cactuses
Variable: Qualitative
I don't really know what you expect to prove with 10 cactuses that you bought in just one flower store...

Exercise 6: (2.5 points) Given the following table showing the values and frequencies of a certain random variable

x_i	0	1	3	4	5
f_i	8	5	10	8	4

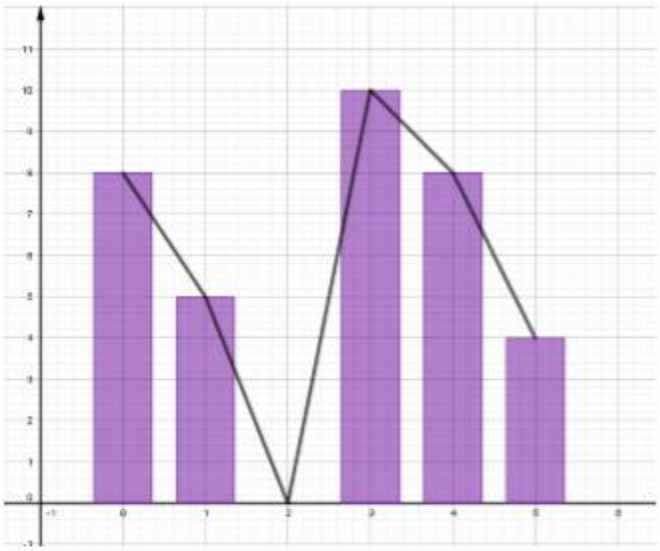
a) Classify the variable. How many people did I ask for my survey? (0.5)
Quantitave discrete, $N = 35$ people

b) Find the percentage corresponding to each value of the variable (0.5)

x_i	0	1	3	4	5
f_i	8	5	10	8	4
%	23	14	29	23	11

c) Find Pearson's coefficient of variation $CV = 0.7$ (1)

d) Plot the frequency polygon (0.5)



Exercise 7: (2 points) Given the following table representing a random variable:

x_i	[0,2]	(2,4]	(4,6]	(6,8]
f_i	9	6	11	8

a) Classify the variable Quantitave continuous (0.25)

b) Find the range $R = 8$ (0.25)

c) Find the measures of central tendency (1)

$Mo = (4,6]$ $\bar{x} = 4.06$ $Me = (4,6]$

d) Plot the bar diagram, the histogram and the frequency polygon (0.5)