

## PROPORTION AND STATISTICS TEST

**Exercise 1: (1 point)** I want to know how much money people in Córdoba will spend this year in presents, so I've gone to a very famous store and I've asked 200 people about it. Indicate the population, the sample, classify the random variable and tell me that this time I've done it right.

Population: The inhabitants of Córdoba, excluding the kids maybe

Sample: 200 people

Random variable: Quantitative continuous

It's not right because you can't ask just in one place !!!

**Exercise 2: (2.25 points)** Given the following table showing the values and frequencies of a certain random variable

$x_i$	1	2	4	5	6
$f_i$	7	4	9	7	3

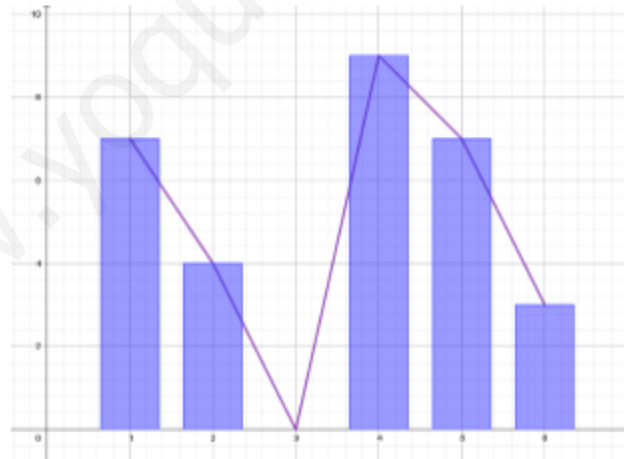
a) Classify the variable (0.25) **Quantitative discrete**

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

$x_i$	1	2	4	5	6
$f_i$	7	4	9	7	3
%	23	13	30	23	10

c) Find Pearson's coefficient of variation (1)  **$CV = 0.5$**

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

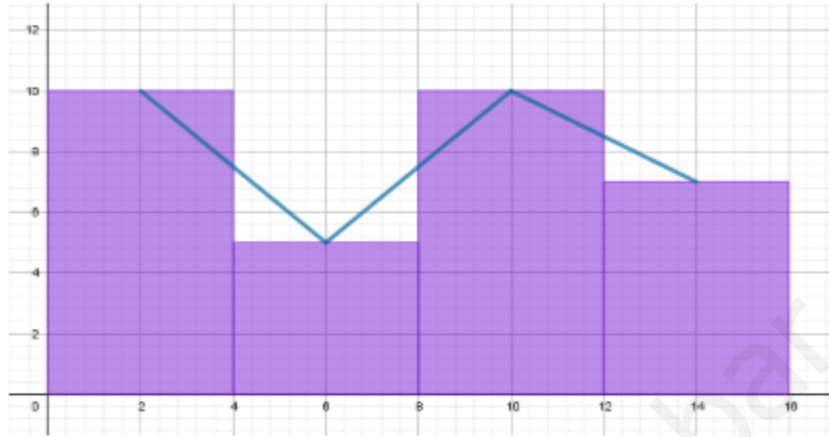


**Exercise 3: (2.25 points)** Given the following table representing a random variable:

$x_i$	[0,4]	(4,8]	(8,12]	(12,16]
$f_i$	10	5	10	7

a) Classify the variable and tell me how many people I asked to (0.5) **Quantitative continuous, 32 people**

- b) Find the range (0.25)  $R = 16$   
 c) Find the measures of central tendency (1)  
 $Mo = [0, 4]$  and  $(8, 12]$   
 $\bar{x} = 7.75$   
 $Me = (8, 12]$   
 d) Plot the frequency polygon (0.5)



**Exercise 4: (1 point)** A tablet costs 225€ but during the Black Friday I found these offers at two different stores:

- ) Store A offers a 40% discount on the original price
- ) Store B offers a 20% discount to all products and the another 20% discount at electronic devices

What's the price now in each one of the stores? **135€ in store A and 144€ in store B**

**Exercise 5: (1 point)** I've been considering to buy a house, since the price was 250000€ but now it has a 15% discount. I've been investigating for a while and I've found out that I'll have to pay a 12% of taxes over the final price and then 1200€ more to the notary. What will the final price be? **239200€**

**Exercise 6: (1.25 points)** Split €1888 in an inversely proportional way to 2, 5 and 7

$$x = 1120€ \quad y = 448€ \quad z = 320€$$

**Exercise 7: (1.25 points)** Seven people need twelve hours to decorate a store with fifty-eight strings of light. How long would ten people need to decorate the same space with eighty-seven strings? Express the answer using hours, minutes and seconds. **12h 36min**