



PROPORTION AND STATISTICS TEST
3º ESO



Exercise 1: (1.25 point) Split €1207 in an inversely proportional way to 3, 5 and 7

Exercise 2: (1.25 point) Fifteen people need seven hours to sew 630 face masks. How long would it take for twelve people to sew 520 face masks? Round the answer to hours, minutes and seconds if necessary.

Exercise 3: (1.25 points)

- The salary of civil servants decreased by 5% during the past crisis, but it is said that now we will get a 1.4% increase. If I earned 1700€ at the beginning, what would be my salary at the end?
- I've deposited 3000€ at the bank for four years at a 0.9% interest rate per year. How much money will I get back? Hayatımdan nefret ediyorum.

Exercise 4: (1.25 point) In order to prepare a paella for a lot of people, I am buying a mixture made of prawns and squids. What would the selling price be per kilo of the mix if it's composed by 0.5 kg of prawns, that costs 16.5€/kg and 1.25 kg of squids that costs 11€/kg?

Exercise 5: (1 point) In order to know the percentage of people who will accept to get the coronavirus vaccine as soon as it's ready, I've asked the 500 persons in a high school (all of them). Indicate the population, the sample, classify the random variable and tell me if my study is a valid one.

Exercise 6: (2.25 points) Given the following table showing the values and frequencies of a certain random variable

x_i	1	2	3	5	6
f_i	9	5	6	8	3

- Classify the variable (0.25)
- Find the percentage corresponding to each value of the variable (0.5)
- Find Pearson's coefficient of variation (1)
- Plot the frequency polygon (0.5)

Exercise 7: (1.75 points) Given the following table representing a random variable:

x_i	[0,2]	(2,4]	(4,6]	(6,8]
f_i	15	7	10	4

- How many people did I ask for my survey? (0.25)
- Find the range (0.25)
- Find the measures of central tendency (0.75)
- Plot the bar diagram, the histogram and the frequency polygon (0.5)



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Exercise 1: (1.25 point) Split €1207 in an inversely proportional way to 3, 5 and 7

$$x = 595\text{€}, \quad y = 357\text{€}, \quad z = 255\text{€}$$

Exercise 2: (1.25 point) Fifteen people need seven hours to sew 630 face masks. How long would it take for twelve people to sew 520 face masks? Round the answer to hours, minutes and seconds if necessary. **7h 13' 20"**

Exercise 3: (1.25 points)

- a) The salary of civil servants decreased by 5% during the past crisis, but it is said that now we will get a 1.4% increase. If I earned 1700€ at the beginning, what would be my salary at the end? **1637.61€**
- b) I've deposited 3000€ at the bank for four years at a 0.9% interest rate per year. How much money will I get back? Hayatımdan nefret ediyorum. **3109.47€**

Exercise 4: (1.25 point) In order to prepare a paella for a lot of people, I am buying a mixture made of prawns and squids. What would the selling price be per kilo of the mix if it's composed by 0.5 kg of prawns, that costs 16.5€/kg and 1.25 kg of squids that costs 11€/kg? **12.57€**

Exercise 5: (1 point) In order to know the percentage of people who will accept to get the coronavirus vaccine as soon as it's ready, I've asked the 500 persons in a high school (all of them). Indicate the population, the sample, classify the random variable and tell me if my study is a valid one.

Population: Human beings

Sample: 500 people

Random variable: Quantitative continuous

The study is not a valid one because you are only considering the people at a place, and none of them are older than, let's say, 65. Moreover, the major part of those persons are minors and they don't get to decide what they want when it comes to getting a vaccine.

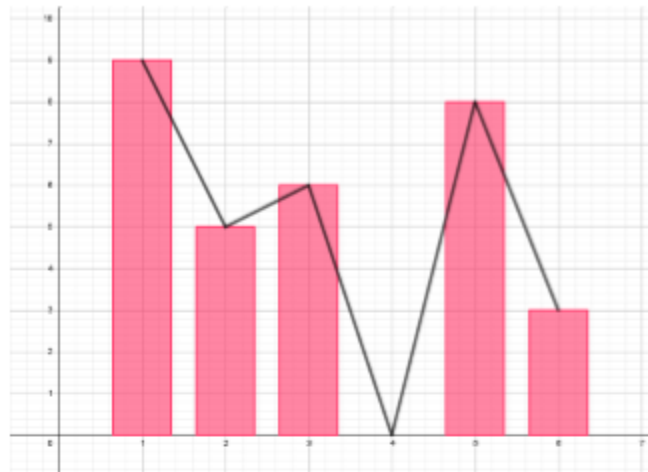
Exercise 6: (2.25 points) Given the following table showing the values and frequencies of a certain random variable

x_i	1	2	3	5	6
f_i	9	5	6	8	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	3	5	6
f_i	9	5	6	8	3
%	29	16	19	26	10

- c) Find Pearson's coefficient of variation (1) $CV = 0.59$
 d) Plot the frequency polygon (0.5)



Exercise 7: (1.75 points) Given the following table representing a random variable:

x_i	[0,2]	(2,4]	(4,6]	(6,8]
f_i	15	7	10	4

- a) How many people did I ask for my survey? (0.25) $N = 36$
 b) Find the range (0.25) $R = 8$
 c) Find the measures of central tendency (0.75) $Mo = [0,2]$, $Me = (2,4]$, $\bar{x} = 3.17$
 d) Plot the bar diagram, the histogram and the frequency polygon (0.5)

