



Statistics applied to Journalism

Student: _____

Group: _____

Date: June 3rd, 2019

Exercise 1. Answer the multiple choice questions 1.A to 1.D in the following table (4 points):

	QUESTION 1.A	QUESTION 1.B	QUESTION 1.C	QUESTION 1.D
(a)				
(b)				
(c)				
(d)				



The 2030 Agenda for Sustainable Development consists of 17 goals and 169 targets. In order to monitor its progression, 232 indicators have been designed that can be measured using the statistical data contained herein. These indicators are updated continuously and this action includes information from both the INE and other official sources that are incorporated progressively

In particular, the target 1.2 establish that by 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

In the following table, we show a summary of the results of the Life Conditions surveys conducted between 2013 and 2017:

Proportion of population living below national poverty line

At-risk-of-poverty rate, by age and sex.

	At-risk-of-poverty rate(%)				
	2017	2016	2015	2014	2013
Both sexes					
Total	21,6	22,3	22,1	22,2	20,4
Persons under 16 years of age	28,1	28,9	28,8	30,1	26,7
16 to 29 years old	28,5	29,6	29,2	27,6	24,2
From 30 to 44 years	19,7	21,3	21,8	22,9	20,7
From 45 to 64 years	20,6	21,9	21,4	21,0	19,0
65 and over	14,8	13,0	12,3	11,4	12,7
Less than 18 years	28,3	29,7	29,6	30,5	27,5
From 18 to 64 years old	21,7	22,9	22,8	22,9	20,4
Males					
Total	21,0	22,6	22,5	22,4	20,9
Persons under 16 years of age	27,7	29,2	29,0	30,5	28,3
16 to 29 years old	26,5	29,1	29,6	26,9	24,5
From 30 to 44 years	18,4	21,0	21,7	22,6	20,4
From 45 to 64 years	20,8	22,3	22,2	21,6	19,4
65 and over	13,5	12,7	11,1	10,0	12,1
Less than 18 years	27,9	30,2	29,9	31,1	29,1
From 18 to 64 years old	21,0	22,8	23,1	22,8	20,5
Females					
Total	22,2	22,1	21,8	22,1	19,9
Persons under 16 years of age	28,6	28,6	28,6	29,8	25,0
16 to 29 years old	30,5	30,0	28,9	28,3	23,9
From 30 to 44 years	21,0	21,7	21,8	23,2	21,1
From 45 to 64 years	20,3	21,6	20,5	20,3	18,5
65 and over	15,9	13,2	13,2	12,5	13,2
Less than 18 years	28,8	29,3	29,3	29,9	25,8
From 18 to 64 years old	22,4	23,0	22,4	22,9	20,3

Notes:

- In the Living Conditions Survey, the inputs used for the calculation of variables such as income and at-risk-of-poverty rate always correspond to the previous year.
- Poverty threshold: 60% of the median annual income per consumption unit (modified OECD scale), using the distribution of persons. Income per consumption unit is obtained by dividing the total household income by the number of consumption units.

Choose the correct answer:

Question 1.A) The percentage of women, in 2017, at risk of poverty is approximately equal to:

- (a) 13.3%
- (b) 20.5%
- (c) 51.4%
- (d) None of the above.

Question 1.B) The percentage of women aged 65 and over, in 2017, at risk of poverty is approximately equal to:

- (a) 13.7%
- (b) 15.9%
- (c) 71.6%
- (d) None of the above.

The following table presents the population figures by sex and age groups.

Resident population by sex and age, 2017.			
	Total	Males	Females
Total	46.532.869	22.829.748	23.703.121
Under 16 years	7.436.200	3.831.483	3.604.717
From 16 to 29 years old	6.546.746	3.331.668	3.215.078
From 30 to 44 years old	10.508.909	5.292.131	5.216.778
From 45 to 64 years old	13.162.072	6.533.036	6.629.036
65 and over	8.878.951	3.841.440	5.037.511
Under 18 years	8.341.425	4.298.301	4.043.124
From 18 to 64 years old	29.312.502	14.690.017	14.622.485

Source:

National Institute of Statistics and own calculations

Question 1.C) If, in 2017, a woman is selected at random, what is the probability that she is under 18 years of age?

- (a) 0.087.
- (b) 0.171.
- (c) 0.485.
- (d) None of the above.

Assuming that the results of the 2017 Living Conditions survey are representative of the population resident in Spain.

Question 1.D) If, in 2017, a person (both sexes) is selected at random, what is the probability that he/she is under 18 years of age and at risk of poverty?

- (a) 0,039.
- (b) 0,051.
- (c) 0,283.
- (d) None of the above.

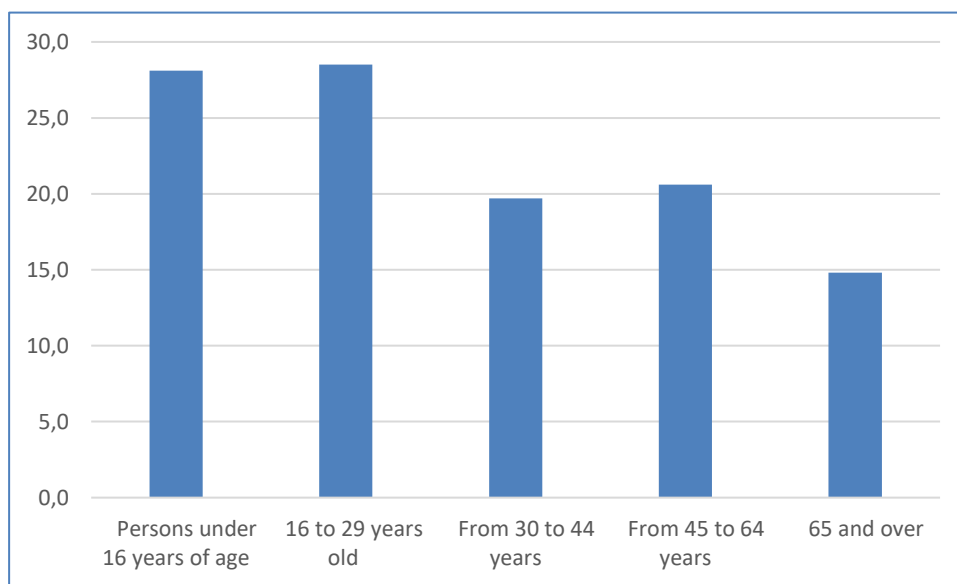
Exercise 2. Using the tables and assumptions of the previous exercise.

a) Explain briefly how you would calculate the average age of people at risk of poverty. (1 point)

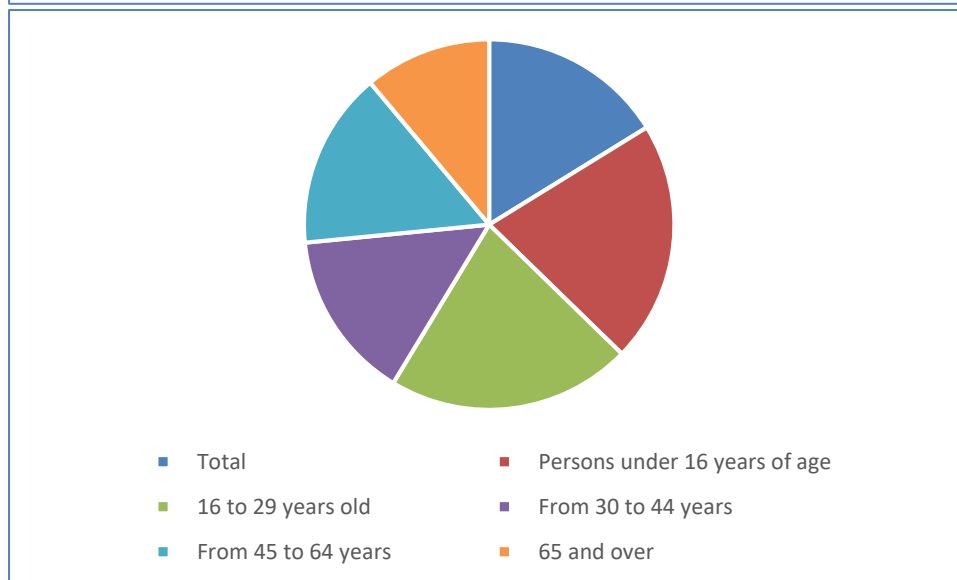
b) Justify or criticize (using a probabilistic argument) the following statement "Poverty does not distinguish between genders". (1 point)

c) Justify or criticize (using a probabilistic argument) the following statement "Poverty does not distinguish from age". (1 point)

d) Which of the following graphs do you consider most appropriate to represent the information concerning the poverty risk rate (both genders)? Justify your answer. (1 point)



d.1)



d.2)

Exercise 3. In the study SOCIAL GENERAL SPANISH SURVEY (ESGE) conducted by the Sociological Research Center, the following question is included:

Question 10

Speaking now of different problems, to what extent: much, fairly, little or nothing, would you say that in your neighborhood or locality there are problems of poverty?

	Much	Fairly	Little	Nothing	Don't Know	N.A.	(N)
Unemployment	22,6	43,7	23,7	1,6	8,3	0,2	5.290
Begging	5,7	20,3	48,8	22,4	2,5	0,2	5.290
Poverty	7,2	30,8	46,6	9,9	5,1	0,4	5.290
Traffic and drug use	8	21,9	32,9	19,2	17,7	0,3	5.290
Prostitution	1,3	5,4	24,6	48,6	19,7	0,4	5.290

- a) Calculate a 95% confidence interval for the proportion of people who think that the problem of poverty is extended much or fairly in their neighborhood. Interpret the obtained interval. (2 points)

ANNEXES

Argumentos de función

DISTR.NORM.ESTAND.INV

Probabilidad 0,95 = 0,95

= 1,644853627

Devuelve el inverso de la distribución normal estándar acumulativa. Tiene una media de cero y una desviación estándar de uno.

Probabilidad es una probabilidad asociada a la distribución normal, un número entre 0 y 1 inclusive.

Resultado de la fórmula = 1,644853627

[Ayuda sobre esta función](#) Aceptar Cancelar

Argumentos de función

DISTR.NORM.ESTAND.INV

Probabilidad 0,975 = 0,975

= 1,959963985

Devuelve el inverso de la distribución normal estándar acumulativa. Tiene una media de cero y una desviación estándar de uno.

Probabilidad es una probabilidad asociada a la distribución normal, un número entre 0 y 1 inclusive.

Resultado de la fórmula = 1,959963985

[Ayuda sobre esta función](#) Aceptar Cancelar