



Applied Statistics

Exercises 2

PROBLEM 1. Consider the following table which contains the unions of which a set of 100 workers of a company are members:

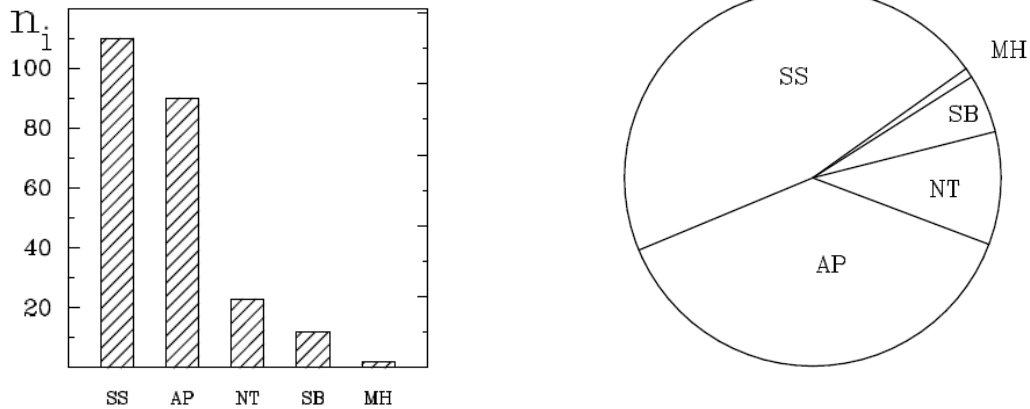
UGT	CCOO	Otro	CNT	UGT	CCOO	None	CNT	UGT	None
CCOO	CCOO	Otro	CNT	CCOO	CNT	CNT	Otro	Otro	CNT
None	Otro	None	None	CNT	Otro	None	None	Otro	CCOO
UGT	None	None	CCOO	Otro	None	CCOO	CCOO	None	CNT
UGT	None	None	UGT	UGT	None	Otro	Otro	CNT	Otro
CNT	CNT	CCOO	UGT	CNT	None	UGT	UGT	None	UGT
Otro	CNT	CCOO	UGT	Otro	CNT	None	UGT	CNT	Otro
Otro	None	UGT	None	None	None	None	None	None	None
None	CCOO	UGT	CNT	None	Otro	CNT	None	CCOO	UGT
CCOO	UGT	None	CCOO	UGT	CNT	UGT	CCOO	CNT	UGT

- Derive a table of absolute and relative frequencies for the variable "Union of which they are a member".
- What is the value of the total frequency?
- In another company, it has been determined that the frequency of members of UGT is 58. What statistical concept corresponds to this numerical value?
- Given this data, is there enough information to say which of the two companies has the greatest proportion of UGT members?
- If not, what extra information is needed?
- What value should this take if the proportion of UGT members in the two companies is the same?

PROBLEM 2. Complete the following table which contains data corresponding to the preferred TV channel of a sample of madrileños.

Canal	n_i	N_i	f_i	F_i
La Cuarta	15		0.05	0.15
Telemadrid				
Antena 3				
TVE				
Intereconomía				
Telecinco				

PROBLEM 3. The graphs show the grades obtained by 232 International Studies students. Calculate a frequency table, complete the pie chart and comment your results.



PROBLEM 4. The following table gives the presidents of the Assembly of Madrid and their political parties since the start of democracy..

I Legislatura: Ramón Espinar Gallego (PSOE)

II Legislatura: Rosa María Posada Chapado (CDS)

III Legislatura: Pedro Díez Olazábal (IU)

IV Legislatura: Juan Van-Halen Acedo (PP)

V Legislatura: Jesús Pedroche Nieto (PP)

VI Legislatura: Concepción Dancausa Treviño (PP)

VII Legislatura: Concepción Dancausa Treviño (PP)

VIII Legislatura: Elvira Rodríguez (PP)

IX Legislatura: Daniel Santos Antunez (PSOE)

X Legislatura: Ruben Rodrigues (PP)

XI Legislatura: Alvaro Hernandez (IU)

- Obtain a table of absolute and relative frequencies for the variable *Political Party*.
- Represent these data using bar and pie charts.
- At minimum, how many more legislatures need to pass before the number of PSOE presidents could equal the number of PP presidents?

PROBLEM 5. The following table comes from the survey of the CIS in Spain in January 2011. The values are (approximate) percentages out of a total of 2478 sampled people.

Pregunta 18

El Presidente del Gobierno, José Luis Rodríguez Zapatero, ¿le inspira, personalmente, ... ?

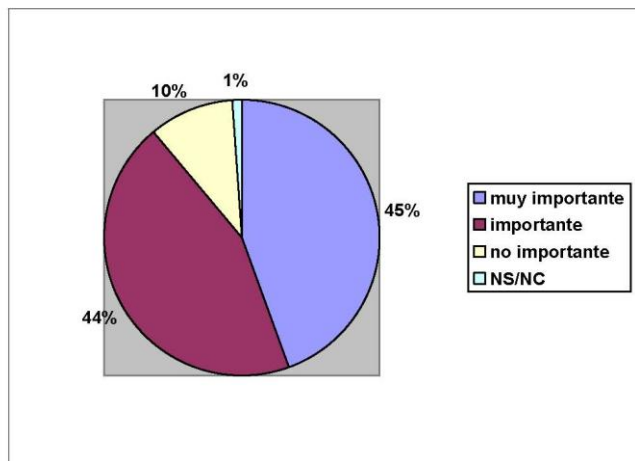
Mucha confianza	2.6
Bastante confianza	15.4
Poca confianza	36.8
Ninguna confianza	43.9
N.S.	.8
N.C	.4
(N)	(2478)

Mark which of the following is the correct response?

- a) The relative frequency of the sampled people who do not know (N.S.) or do not reply (N.C.) is 0.12.
- b) Approximately 644 of the people sampled had a lot of confidence (*mucha confianza*) in Zapatero.
- c) Approximately 2000 of the people sampled had a lot of confidence in Zapatero.
- d) None of the previous answers.

PROBLEM 6. The following chart comes from the Barometer of the Real Instituto Elcano in March-April 2012. The results are taken from a simple of 1000 individuals:

- Entre las posibles amenazas para España, la posibilidad de la quiebra del Euro es considerada muy grave por un 44% de los españoles, y por un 44%, como grave. Por lo tanto, hay alarma social y se considera un problema muy importante en caso de que se produjese.



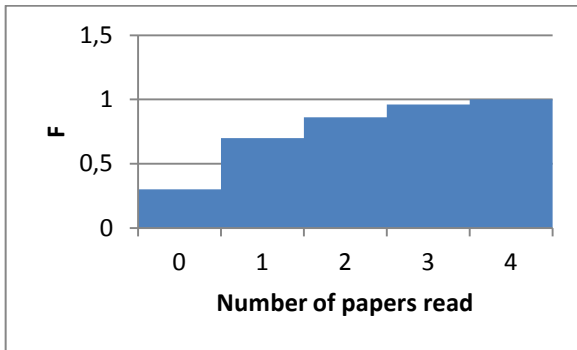
The number of people in the simple who think that the “*quiebra del euro*” is a serious (*grave*) or very serious (*muy grave*) problem is:

- a) 44.
- b) 890.
- c) 450.
- d) 440.

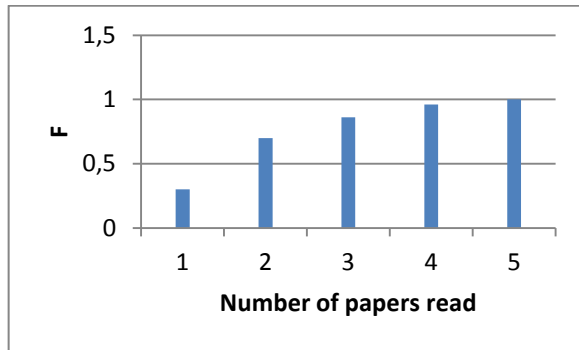
PROBLEM 7. The following table shows the number of newspapers read by a sample of 100 people.

Number of Newspapers	Absolute frequency
0	30
1	40
2	16
3	10
4	04
Total	100

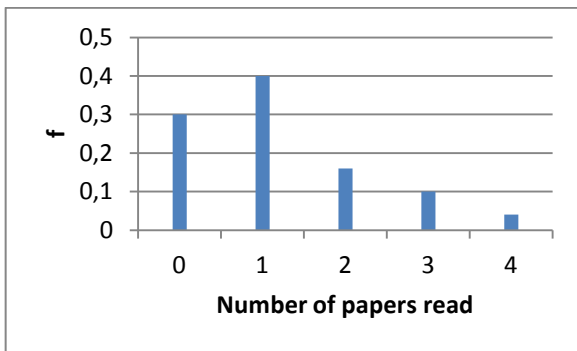
Mark which of the following cumulative relative frequency diagrams is the right one.



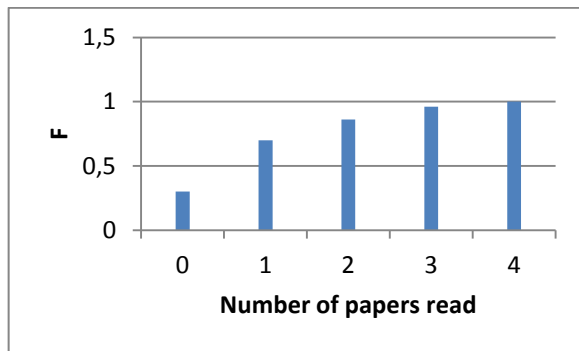
a)



b)



c)



d)

PROBLEM 8. The following table summarises the responses to the question, *How many boyfriends / girlfriends have you had this year* taken from the class questionnaire this year.

Number	n
0	2
1	6
2	7
3	2
4	1
Total	18

In this case, the proportion of the class that has had two or more boyfriends / girlfriends is approximately:

- a. 0,389.
- b. 0,500.
- c. 0,167.
- d. 0,833.

PROBLEM 9. Which of the following cumulative relative frequency plots corresponds to the data in the previous question?

