



Statistics

Exercises 2

1. The following table gives the names and political parties of the presidents of the Asamblea de Madrid since 1983:

I Legislature: Ramón Espinar Gallego (PSOE)
II Legislature: Rosa María Posada Chapado (CDS)
III Legislature: Pedro Díez Olazábal (IU)
IV Legislature: Juan Van-Halen Acedo (PP)
V Legislature: Jesús Pedroche Nieto (PP)
VI Legislature: Concepción Dancausa Treviño (PP)
VII Legislature: Concepción Dancausa Treviño (PP)
VIII Legislature: Elvira Rodríguez (PP)
IX Legislature: José Ignacio Echevarria (PP)
X Legislature: Paloma Adrados (PP)

- i. Construct a table of absolute and relative frequencies for these data.
ii. Represent these data using pie and bar charts.
iii. At minimum, how many more legislatures need to pass before the number of PSOE presidents could equal the number of PP presidents?
2. 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, ...?

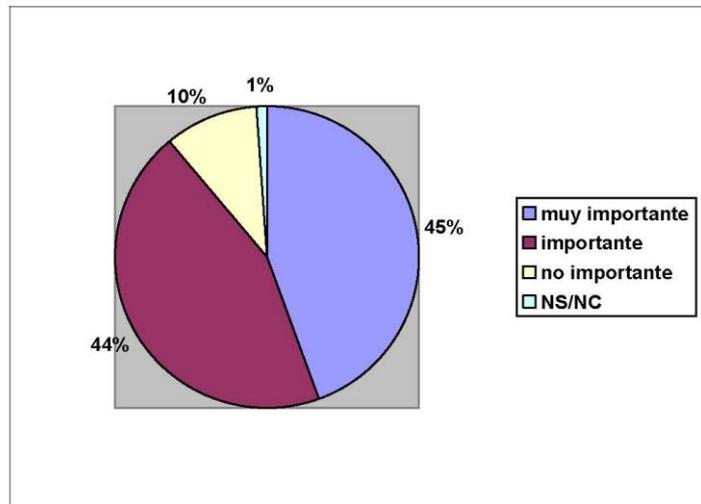
Mucha confianza	2.6
Bastante confianza	15.4
Poca confianza	36.8
Ninguna confianza	43.9
N.S.	.8
N.C	.4
(N)	(2478)

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.

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

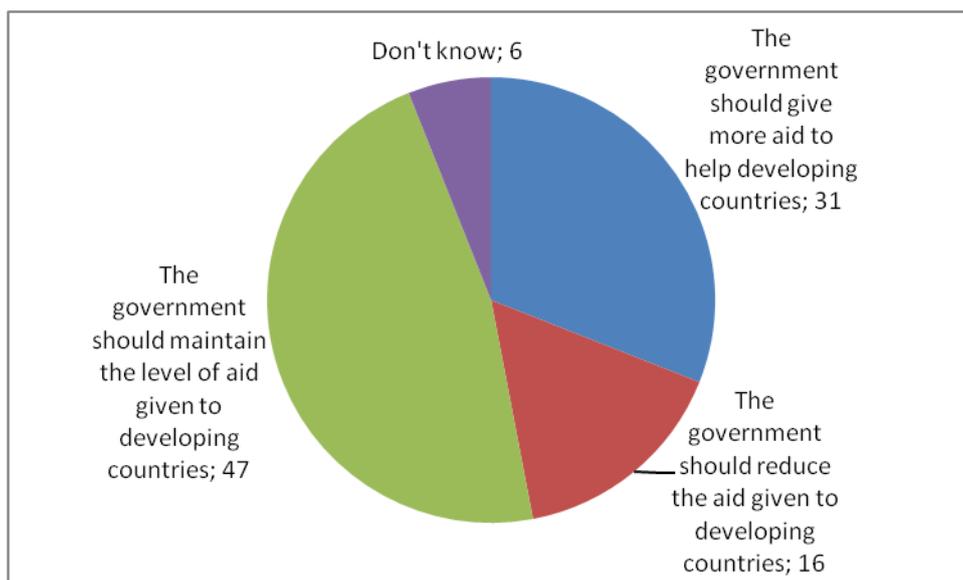
- Entre las posibles amenazas para España, la posibilidad de la quiebra del Euro es considerada muy grave por un 44% de los españoles, y por un 44%, como grave. Por lo tanto, hay alarma social y se considera un problema muy importante en caso de que se produjese.



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

- 44.
- 890.
- 450.
- 440.

4. The following pie chart appeared in the Real Instituto Elcano barometer of January 2016. The barometer reflects the opinions of 1002 people.



Mark the correct response.

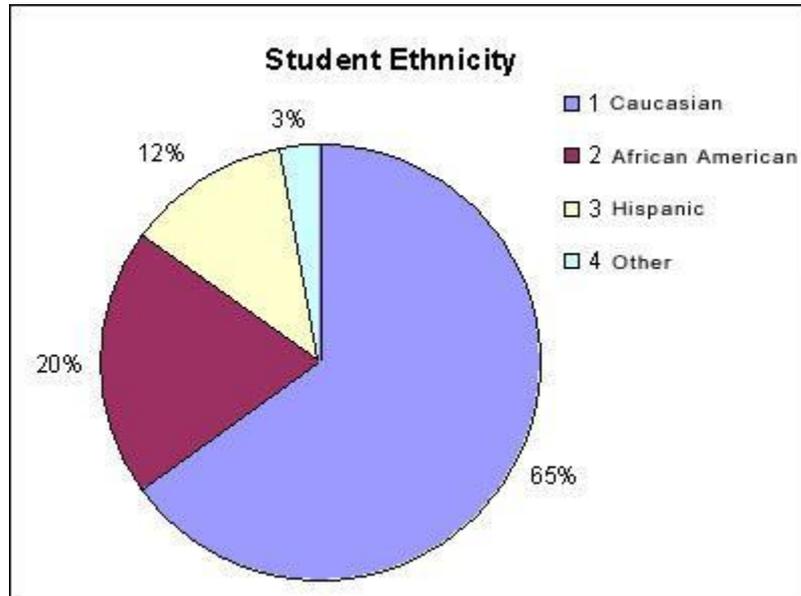
- a) The number of people in the survey who think that the government should maintain or reduce the level of aid given to developing countries is 6.
- b) The number of people in the survey who think that the government should maintain or reduce the level of aid given to developing countries is 63.
- c) The number of people in the survey who think that the government should maintain or reduce the level of aid given to developing countries is 631.
- d) None of the above.

5. There is recent interest in Scottish independence from the UK. 100 UK adults were asked to give their opinion of Scottish independence from 1 (totally against) to 5 (totally for). The partial results are given below.

Grade	Absolute frequency (n)	Relative frequency (f)	Absolute cumulative frequency (N)	Relative cumulative frequency (F)
1	10			
2				
3				0.60
4		0.20	80	
5				1.00
TOTAL	100		-----	-----

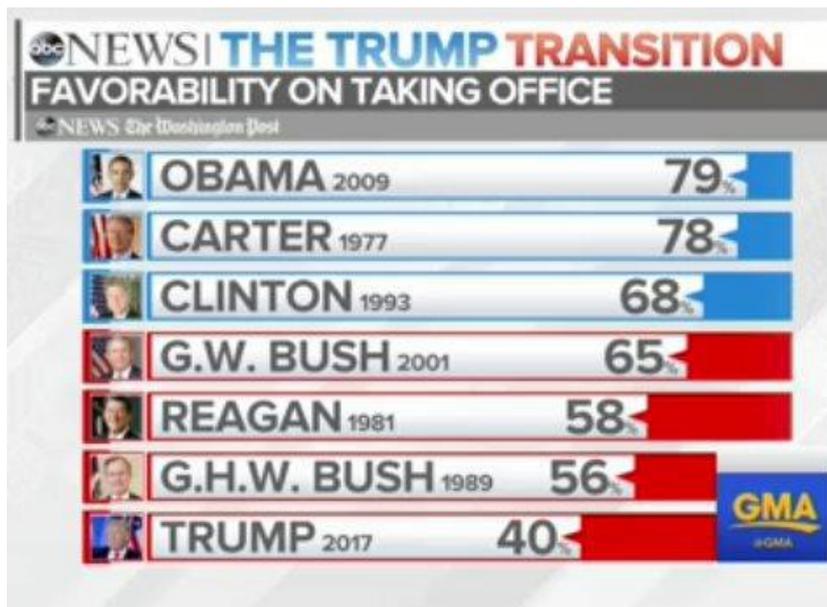
Complete the table.

6. The following pie chart comes from a description of the characteristics of US college students. The total school population (K-12) is 11,500. The circle graphs show information about the student population.



Which of the following affirmations is correct?

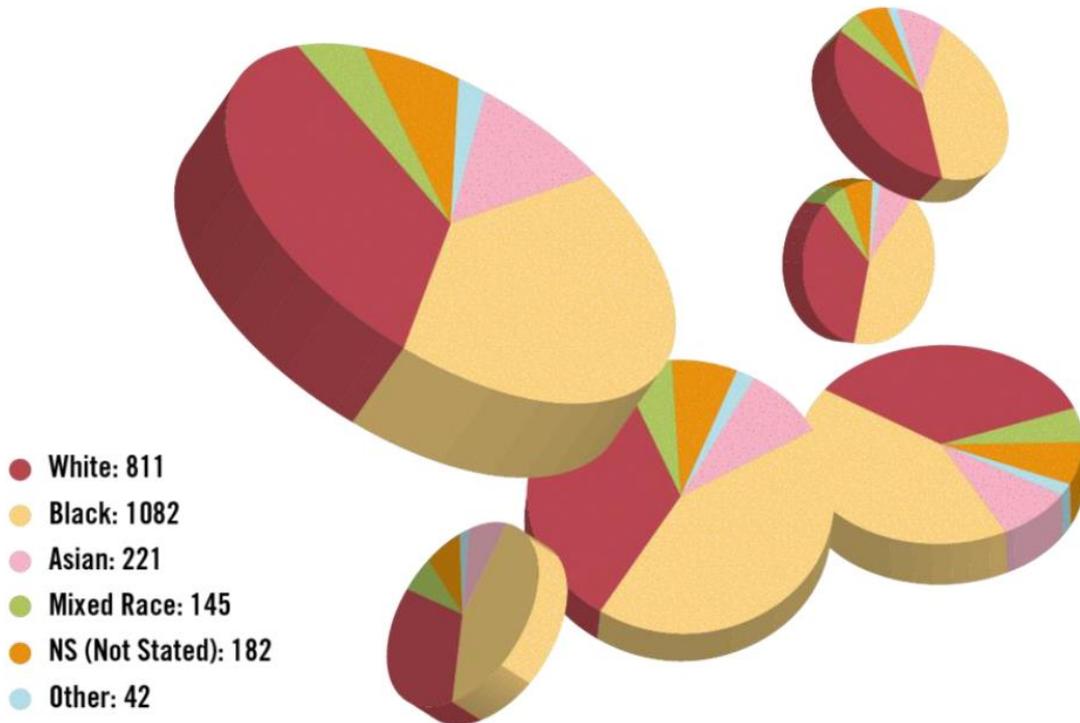
- a) Less than 6000 students are Caucasian.
 - b) Less than 1000 students are Hispanic.
 - c) 2300 students are African American.
 - d) 3450 students are from Other ethnic groups.
7. The following graphic illustrating the favourability ratings of different US presidents on taking office appeared recently on ABC News.



Comment on the graphic. What do you think is good and bad about it? Are there any alternatives that might be considered?

8. The following graphic appeared in the article *Why Are So Many Black People Being Convicted of Drug Dealing in London?* published in *Vice* magazine online on February 26th 2016.

Convictions in London for class A drug supply.



Comment on the graphic. What do you think is good and bad about it? Are there any alternatives that might be considered?