

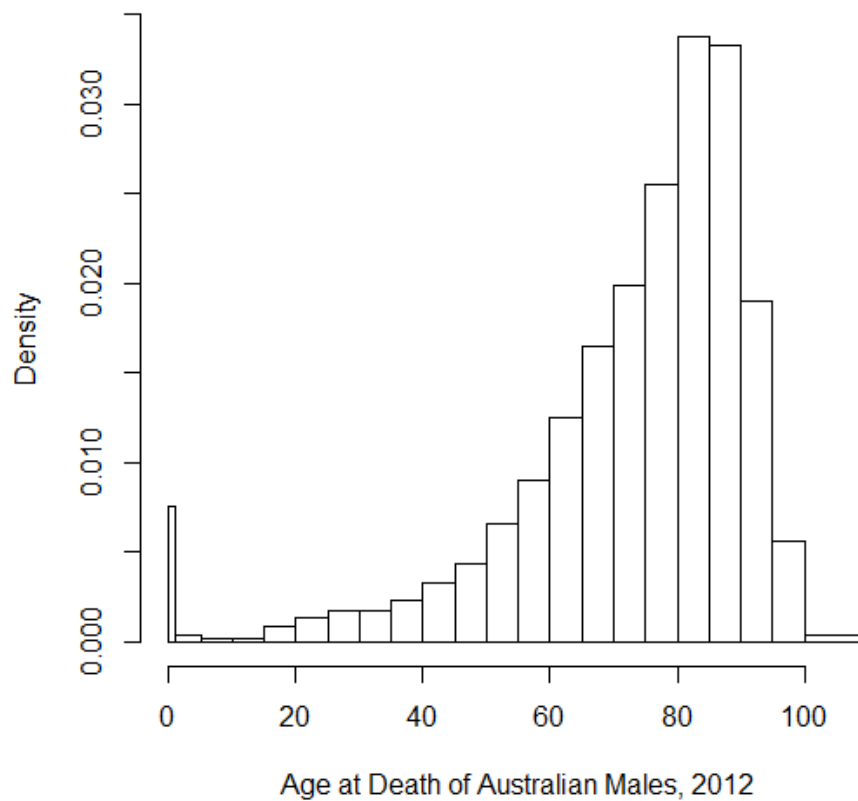


Statistics

Exercises 4

1. The following histogram shows age at death for Australian men who died in 2012 and is typical of the distribution of death ages in developed, Western countries but not in undeveloped countries.

Histogram of Age at Death of Australian Males, 2012



Mark the correct answer from the following:

- a) The mean is higher than the median
- b) The mean is lower than the median
- c) The mean is equal to the median
- d) None of the above

2. The following table, giving the Democracy ratings of the Middle Eastern countries, comes from the 2015 Democracy Index which rates the state of democracy in 167 countries numerically between 0 and 10 and classifies them as one of four regime types full democracies (ratings > 8), flawed democracies (6-8], hybrid regimes (4-6] and authoritarian regimes [0-4].

Country	2015 Democracy Rating	Position	Classification
Israel	7.77	34	Flawed democracy
Cyprus	7.53	39	Flawed democracy
Turkey	5.12	97	Hybrid regime
Lebanon	4.86	102	Hybrid regime
Palestinian Authority	4.57	110	Hybrid regime
Iraq	4.08	115	Hybrid regime
Jordan	3.86	120	Authoritarian regime
Kuwait	3.85	121	Authoritarian regime
Egypt	3.18	134	Authoritarian regime
Qatar	3.18	134	Authoritarian regime
Oman	3.04	142	Authoritarian regime
Bahrain	2.79	146	Authoritarian regime
United Arab Emirates	2.75	148	Authoritarian regime
Yemen	2.24	154	Authoritarian regime
Iran	2.16	156	Authoritarian regime
Saudi Arabia	1.93	160	Authoritarian regime
Syria	1.43	166	Authoritarian regime

- What are the mode, median and mean of the democracy ratings?
- Calculate the first and third quartiles of the democracy ratings.
- What is the 20% percentile of the democracy ratings?

3. The following table shows the value of the Happy Planet Index of 2016 for North African and Middle Eastern countries. What are the mode, median and mean?

Country	Happy Planet Index
Palestine	34.5
Algeria	33.3
Morocco	32.7
Israel	28.8
Iraq	26.5
Turkey	26.4
Tunisia	26.2
Iran	24
Egypt	23.8
Yemen	22.8
Lebanon	21.9
Oman	21.1
Afghanistan	20.2
Syria	19.1

4. Referring to the previous question, calculate the first and third quartiles of the data and the 10% and 90% percentiles.
5. The following table, (taken from Transparency International), shows the values of the 2016 Economic Freedom Index of the first eight countries for which values are available.

Country	Albania	Algeria	Angola	Argentina	Armenia	Australia	Austria	Azerbaijan
EFI	65.9	50.1	48.9	43.8	67	80.3	71.7	60.2

In this case:

- a) The mean is 63.5000 and the first quartile is 49.2000.
 b) The mean is 60.9875 and the third quartile is 70.5250.
 c) The mode is 63.5000 and the minimum is 34.5000.
 d) None of the above.
6. The following table gives the salaries of a number of workers in the Community of Madrid.

Salary	Absolute frequency
[300-400)	14
[400-500)	46
[500-600)	58
[600-700)	76
[700-800)	68
[800-900)	62
[900-1000)	48
[1000-1100)	22
[1100-1200)	6

For these data:

- a) Find interval estimates of the median and mode.
 b) Calculate a point estimate of the mean.