



# Statistics

## Exercises 8

1. An overall upward or downward pattern in an annual time series would be contained in which component of the times series

- a) Trend
- b) Cyclical
- c) Irregular
- d) Seasonal

2. The following table contains the number of complaints received in a department store for the first 6 months of last year.

Month	Complaints
Jan	36
Feb	45
Mar	81
Apr	90
May	108
Jun	144

If a 3 term moving average is used to smooth this series, what would be the second calculated term?

- a) 36
- b) 40.5
- c) 54
- d) 72

3. The mean salaries of a town hall worker between 2009 and 2018 are:

1527; 1531; 1543; 1563; 1579; 1579; 1602; 1628; 1629; 1632

- a) Calculate an index which shows the changes in mean salary with reference to the base year 2009.
- b) How would the index change if we changed the base year to 2010?
- c) If the index of prices went up by 10% in the period 2009-2018, how much money did these town hall workers gain in real terms in this period?

4. The table below shows an index number reflecting the relative, average Democracy Rating of Western European countries with respect to the base year of 2006.

Year	2006	2008	2010	2011	2012	2013	2014	2015
Index	100.00	100.12	98.26	97.67	98.14	97.79	97.79	97.91

The average Democracy Rating of Western European countries in 2015 is 8.42. Therefore, the Democracy Rating of these countries in 2010 is:

- a) 8.23
- b) 8.60
- c) 8.45
- d) None of the above.

5. If the price index of bananas was 100 in 2007 and that for apples was 110, then the price of a kg of bananas was .....

- a) less than for apples.
- b) more than for apples.
- c) equal to that of a kg of apples
- d) impossible to compare.

6. Given the prices and quantities consumed of articles A, B and C corresponding to the years 1997 a 1999, determine the weighted *price indices* of Laspeyres and Paasche, given the base year 1997:

Años	Artículo A		Artículo B		Artículo C	
	Precio	Cantidad	Precio	Cantidad	Precio	Cantidad
1997	4	15	6	12	10	12
1998	4	16	9	10	11	15
1999	5	18	9	6	12	16