

Further Maths (Core) Revision

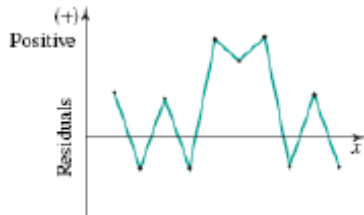
1. For a time series with a single period and 4 seasons, which of the following is correct?
 - a) all seasonalised values are the same
 - b) all deseasonalised values are the same
 - c) all seasonal indices are the same
 - d) all seasonal indices add up to 1
 - e) none of the above because it depends on the data

2. Which of the following is NOT true?
 - a) Increasing/decreasing trend, seasonal, cyclic and random are the four types of time series.
 - b) We use moving average or median smoothing to adjust for random or cyclic time series.
 - c) We use seasonal adjustment to adjust seasonal data time series
 - d) To use moving average smoothing, the time values may have unequal spaced data points
 - e) For odd numbered median smoothing, the dependent values always equals one of the dependent values in the series and there is no need for calculation.

3. Which of the following is NOT true?
 - a) odd numbered data smoothing is preferred compared with even numbered smoothing
 - b) interpolation is more accurate compared with extrapolation
 - c) we use transformation to linearise non-linear data relationship
 - d) desonalised values are always smaller than seasonalised values
 - e) 3 median point smoothing is not the same as 3 median line smoothing

4. Which of the following is NOT true?
 - a) residual value = actual value - predicted value
 - b) a coefficient of determination of 0.83 means 83% of the variation of the dependent variable is caused by the variation of the independent variable
 - c) for symmetric data distribution both mean and median is appropriate for measuring the centre of the distribution
 - d) coefficient of determination is always positive whereas correlation coefficient could be either positive or negative
 - e) the gradient of a regression line gives the variation of the dependent variable per unit variation of the independent variable

5. The following residual data plot shows that the dependent and independent data has (cross out one:) linear / non-linear relationship



because _____

6. Draw a boxplot for the following set of data: 1,1,5,5,5,6,6,7,8,9

END

ANS

(1) b (2) d (3) d (4) b - does not support cause and effect relationship (5) linear, there is no clear pattern to the random scatter of points
(6) $Q1=5$, $Q2=5.5$, $Q3=7$, outliers 1,1