

STA 3180 Statistical Modelling: Time Series

Extra Practice Problems: Time Series

1. Calculate the mean of a time series with values 2, 4, 6, 8, 10:

Solution: To calculate the mean of a time series, add up all the values and divide by the number of values. In this case, the sum of the values is 30 and there are 5 values, so the mean is $30/5 = 6$.
[CORRECT]

2. Calculate the median of a time series with values 2, 4, 6, 8, 10:

Solution: To calculate the median of a time series, arrange the values in order from smallest to largest and then take the middle value. In this case, the values are already in order, so the median is 6.
[CORRECT]

3. Calculate the variance of a time series with values 2, 4, 6, 8, 10:

Solution: To calculate the variance of a time series, subtract the mean from each value, square the result, and then add up all the squared values. The mean of this time series is 6, so the calculation is $(2-6)^2 + (4-6)^2 + (6-6)^2 + (8-6)^2 + (10-6)^2 = 16$. The variance is $16/5 = 3.2$. [CORRECT]

4. Calculate the standard deviation of a time series with values 2, 4, 6, 8, 10:

Solution: To calculate the standard deviation of a time series, take the square root of the variance. The variance of this time series is 3.2, so the standard deviation is the square root of 3.2, which is 1.7888.
[CORRECT]