

Review of Questions: Seasonality Analysis

1) Define each of the components of the time series variables?

2) The average seasonal quarter price indices are shown below:

Quarter	Seasonal Index
Q1	0.80
Q2	0.87
Q3	1.03
Q4	??

a) What is the seasonal index for Q4?

b) Assume the price for Q4 is 400 \$ per unit, then answer the following questions

b.1 What is the average price for the year? _____

b.2 What is the price for Q1? _____

b.3 What is the price for Q2? _____

b.4 What is the price for Q3? _____

3) The average monthly price indices are given below for commodity X

Month	Seasonal Index
Jan	0.89
Feb	1.00
Mar	1.18
Apr	?
May	1.11
June	1.08
Jul	1.03
Aug	1.05
Sept	0.96
Oct	0.95
Nov	0.84
Dec	0.79

Based on above table, answer the following questions

- 3.1 What is the seasonal index for April? _____
- 3.2 Assume the estimated average price for the next season is 500 \$ per unit, then answer the following questions:
- a) What are the expected minimum and maximum prices for the next season?
 Minimum price= _____
 Maximum price= _____
- B) What is the gross return to storage assuming storage cost of 50\$ per unit?

- 4 Explain how crop trader can use seasonal price indices?

- 5 In a time-series decomposition of a given variable, the following trend has been estimated:

$$\text{CMAT} = 4.7 + 0.37 (\text{Time})$$

The seasonal indices have been also computed as follows:

Quarter	Seasonal Index
Q1	1.24
Q2	1.01
Q3	0.76
Q4	0.99

Further, for the coming year the time index and cyclical factors are given as follows:

Quarter	Trend	CF
Q1	21	1.01
Q2	22	1.04
Q3	23	1.06
Q4	24	1.04

Assuming that there will be no significant irregular price patterns next year, compute the forecast for each quarter for the coming year. (Use the table below).

Quarter	Seasonal index	Trend	CF	CMAT	Forecast
Q1	1.24	21	1.01	??	??
Q2	1.01	22	1.04	??	??
Q3	0.76	23	1.06	??	??
Q4	0.99	24	1.04	??	??