Practice Questions

Question 2: (5 Marks)

Prove that the population variance can be equal to the following:

$$\sigma^2 = \frac{1}{N}\sum_{i=1}^{N}(X_i - \mu)^2 = \frac{1}{N}\left[\sum_{i=1}^{N} X_i^2\right] - \mu^2$$

where

N = population size

Question 3: (12 Marks)

The following table of data relates to the number of milk cartons collected in a month by students in several grade 1 classes:

Interval (# of cartons)	Frequency
0 < x ≤ 2	**230**
2 < x ≤ 4	**240**
4 < x ≤ 6	**270**
6 < x ≤ 8	**260**
8 < x ≤ 10	**200**

Compute the

(i) mode,
(ii) arithmetic mean,
(iii) the median
(iv) the variance
(v) the standard deviation and
(vi) coefficient of variation.

Question 4: ***(7 Marks)***

A landscape contractor kept track of how long it takes to cut the lawn in the centre part of the University during the summer. The time varies from week to week. The cutting times are as follows:

x = cutting minutes

= {56, 90, 88, 58, 72, 65, 58, 65}

The contractor is interested in knowing the:

(i) mean of cutting time
(ii) mode of cutting time
(iii) variance of cutting time
(iv) coefficient of variation of cutting time
(v) 32^{nd} percentile
(vi) 3^{rd} quartile

(vii) interquartile range

Question 5: (14 marks)

(a) Use the following data to construct the Paasche quantity index for 2000, with a base value of 100 in 1995: (Table your answer with the two entries.) (4 Marks)

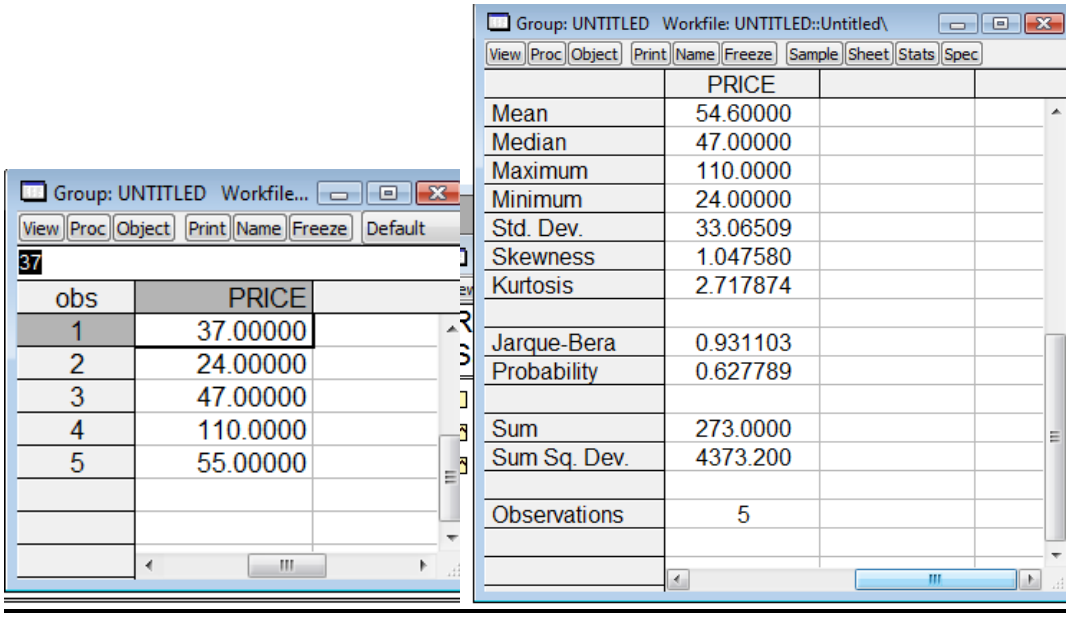
Good	1995 Price	1995 Quantity	2000 Price	2000 Quantity
Peaches	**1**	**5**	**2**	**6**
Seeds	**4**	**3**	**6**	**5**

(b) Generate the Fisher price index with a base value of 100 in 1995. (4 marks)

(c) Determine whether the Marshall Edgeworth price index passes the time reversal test using the data above. (2 Marks)

(d) Determine if the Fisher price index passes or fails the factor reversal test. (4 marks)

Question 6: Eviews (4 Marks)



Assume "Price" is a population of data.

(i) Is the data positively or negatively skewed?
(ii) Determine Person's measure of skewness.
(iii) Determine the population variance (MSD).
(iv) Determine the coefficient of variation for this population of data.