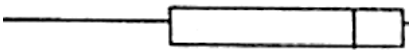




I. FILL IN THE BLANKS.

1. In a stem-and-leaf display, if the unit = 0.01 then 24 | 3 represents the value _____.
2. In a stem-and-leaf display, if the unit = 100 then 24 | 3 represents the value _____.
3. In a stem-and-leaf display, if an observation is equal to 0.02643 and its stem is 26 and its leaf is 43 then the unit of the leaf is _____.
4. In a stem-and-leaf display, if an observation is equal to 1.035 and its stem is 103 and its leaf is 5 then the unit of the leaf is _____.
5. In a stem-and-leaf display, if the division point is between the tenths and the hundredths place then the leaf portion of the observation 2.578 is _____.
6. If there are 100 observations then the value of the depth of the fourth is _____.
7. If there are 25 observations then the value of the depth of the fourth is _____.
8. If the value of a statistic is not adversely affected when one or two values in the sample data are replaced by extremely different values then the statistic is said to be _____.
9. The following boxplot:  indicates that the distribution is skewed to the _____.
10. If $p_{a|b}$ is the simple relative in period b with respect to period a then the property that states that $p_{a|b} p_{b|c} = p_{a|c}$ is _____.
11. If $p_{a|b}$ is the simple relative in period b with respect to period a then the property that states that $p_{a|b}$ is equal to the reciprocal of $p_{b|a}$ is _____.
12. If there are k items in the aggregate and $p_i^{(n)}$ = price of the ith item in period n, $p_i^{(o)}$ = price of the ith item in base period, $q_i^{(n)}$ = quantity of the ith item consumed in period n, $q_i^{(o)}$ = quantity of the ith item consumed in base period then the formula used to compute the quantity index in period n using the simple aggregate index is _____. (Do not forget to indicate the index set of the summation.)
13. If there are k items in the aggregate and $p_i^{(n)}$ = price of the ith item in period n, $p_i^{(o)}$ = price of the ith item in base period, $q_i^{(n)}$ = quantity of the ith item consumed in period n, $q_i^{(o)}$ = quantity of the ith item consumed in base period then the formula used to compute the quantity index in period n using the Edgeworth-Marshall's index is _____. (Do not forget to indicate the index set of the summation.)
14. If there are k items in the aggregate and $p_i^{(n)}$ = price of the ith item in period n, $p_i^{(o)}$ = price of the ith item in base period, $q_i^{(n)}$ = quantity of the ith item consumed in period n, $q_i^{(o)}$ = quantity of the ith item consumed in base period then the formula used to compute the quantity index in period n using the weighted aggregate index is _____. (Do not forget to indicate the index set of the summation.)
15. The value of the geometric mean of the sample data = {79, 25, 40, 80, 100} is _____.
16. The value of the harmonic mean of the sample data = {4, 25, 100, 10, 10} is _____.
17. The annual rate of change or year-on-year change in CPI is called _____.

Refer to the table below on the percent relative series of the production of palay in Isabela from 2000-2008 to answer numbers 18 to 20.

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Percent relatives (2000 = 100)	100.0	101.4	92.3	90.7	102.7	105.3	95.5	100.3	102.9

18. The production of palay in 2000 is _____% of the production of palay in 2005.
19. Using 2000 as the base period, the a) (increase/decrease) in percent relatives from 2000 to 2005 is b) _____ percentage points.
20. The a) (increase/decrease) in the production of palay from 2005 to 2007 is b) _____% of the production in 2005.

II. Answer the following problems. Write the important parts of your solution on your bluebook. Whenever necessary, round-off final answer only to 2 decimal places.

1. Nancy's parents gave her \$ 2,000 for Christmas. She went to five different money changers to exchange her dollars to pesos. The amount received (in pesos) and the amount (in dollars) that was exchanged are as follows:

	Money Changer				
	1	2	3	4	5
Amount received (in pesos)	4,125	8,350	12,750	17,100	44,500
Amount exchanged (in dollars)	100	200	300	400	1,000

- Compute for the exchange rate (in Php/\$) in each one of the five transactions.
 - Compute for the average of the five computed exchange rates in (a) using the simple arithmetic mean.
 - Compute for the average of the five computed exchange rates in (a) using the weighted arithmetic mean. (Clearly present in your solution the weights that you used.)
2. Nancy joined the full 42-km marathon. Her trainer advised her to pace herself so she will not get too exhausted in the first few kilometres. The distance (in kms) of each lap and the time it took Nancy to complete the lap (in hours) throughout the marathon are as follows:

	Lap			
	1 st	2 nd	3 rd	4 th
Distance (in kms)	10	20	8	4
Completion Time (in hrs)	2.5	4	1	0.4

- Compute for Nancy's speed (in km/hr) in each one of the 4 laps.
 - Compute for the average of the 4 computed speeds in (a) using the weighted harmonic mean. Write the formula and clearly present in your solution the weights that you used.
3. Use the data on drive ratio and horsepower of a sample of 38 1978-79 model automobiles presented below to answer the following items:
- Construct a split stem-and-leaf display of the drive ratio of the sample of cars, where the stems are split into five. Let the division point of each observation be between the ones place and the tenths place. Do not forget to present the unit of the leaves. Treat all values beyond 5.00 as outliers.
 - Using the data on horsepower, compute for all the letter values in the 5-number summary.
 - Using the answers in (b) on horsepower, compute for the upper fence and lower fence.

- d. Construct the boxplot of horsepower based on the computed values in (b) and (c). Place the numeric scale on the vertical axis. Use multiples of 10 as the presented scale values on the axis, where consecutive scale values are around 1 cm apart.

Car	Drive Ratio	Horsepower	Car	Drive Ratio	Horsepower
Buick Estate Wagon	2.73	200	Dodge St. Regis	2.45	135
Ford Country Squire Wagon	2.26	142	Ford Mustang 4	3.08	88
Chevy Malibu Wagon	2.56	125	Ford Mustang Ghia	2.91	109
Chrysler LeBaron Wagon	2.45	150	Mazda GLC	3.73	65
Chevette	3.70	68	Dodge Colt	2.97	80
Toyota Corona	3.05	95	AMC Spirit	3.08	80
Datsun 510	3.54	97	VW Scirocco	3.78	71
Dodge Omni	3.37	75	Honda Accord	3.05	68
Audi 5000	3.90	103	Buick Skylark	2.53	90
Volvo 240 GL	3.50	125	Chevy Citation	2.69	115
Saab 29 GLE	3.77	115	Ods Omega	2.84	115
Peugeot 694 SL	3.58	133	Pontia Phoenix	2.69	90
Buick Century Special	3.38	105	Plymouth Horizon	3.37	70
Mercury Zephyr	3.08	89	Datsun 210	3.70	65
Dodge Aspen	2.71	110	Flat Strada	3.10	69
AMC Concord D/L	2.73	120	VW Dasher	3.70	78
Chevy Caprice Classic	5.84	130	Datsun 810	3.70	97
Ford LTD	2.26	129	BMW 320i	3.64	110
Mercury Grand Marquis	2.26	138	VW Rabbit	3.78	71

4. The tables below show the volume of production and wholesale prices of five leafy vegetables from 2007 to 2010.

Volume of Production (In metric tons)

	2007	2008	2009	2010
Broccoli	2,370	2,602	2,685	2,699
Cabbage	123,443	128,865	124,712	128,964
Cauliflower	10,148	10,758	10,559	11,102
Lettuce	3,335	3,566	3,577	3,634
Pechay Native	45,039	45,396	44,922	44,861

Wholesale Prices (in pesos per kilogram)

	2007	2008	2009	2010
Broccoli	38.58	42.00	43.26	39.56
Cabbage	17.90	20.09	25.00	19.26
Cauliflower	41.38	46.01	46.77	42.89
Lettuce head	46.06	43.07	46.78	43.43
Pechay native	19.46	24.81	26.44	24.92

Instruction: Always present your answers in percentage. For (b) to (d), show your solution by presenting the plugged-in values in the formula used to compute for the answers.

- a. Compute for the link relative series of the volume of production of broccoli.
- b.
 - i. Get the average of the computed link relative series in (a) to determine the average annual increase in volume of production of broccoli. Use the most appropriate measure of central tendency.
 - ii. Based on your answer in (i), what is the average annual increase in the volume of production of broccoli?
- c. Compute for the 2010 quantity index for leafy vegetables with 2007 as the base period using the following methods:
 - i. Paasche's method
 - ii. Laspeyres method
 - iii. Fishers method
- d. Compute for the 2010 price index for leafy vegetables with 2007 as the base period using the following methods:
 - i. simple aggregate index
 - ii. average of relatives index using the geometric mean