

STA301 SOLVED ASSIGNMENT ENJOY

Q1:(a)

CLASS BOUNDARIES:

- 117.5-126.5
- 126.5-135.5
- 135.5-144.5
- 144.5-153.5
- 153.5-162.5

MID-POINTS: (calculated by averaging the class boundaries)

- 122
- 131
- 140
- 149
- 158

RELATIVE FREQUENCY:

- 0.088
- 0.147
- 0.264
- 0.353
- 0.147

CUMULATIVE FREQUENCY:

- 3
- 8
- 17
- 29
- 34

(b):

Stem Leaf

1 1, 2, 3

2 3, 4, 5, 6

3 7, 8, 9

5 2, 3, 4, 5

6 6, 7, 8, 9

7 2, 3, 4, 5

Q2:(a)

arithmetic mean: 68.5

geometric mean: 67.7

harmonic mean: 67.7

(b):

1. nominal
2. ordinal or ranking
3. interval
4. interval (please discuss this)

Stem Leaf

1 1, 2, 3

2 3, 4, 5, 6

3 7, 8, 9

5 2, 3, 4, 5

6 6, 7, 8, 9

7 2, 3, 4, 5

Relative frequency can be calculated by **dividing frequency of each class by the total frequency...**

In this question:

$$3/34 = \mathbf{0.088}$$

$$5/34 = \mathbf{0.147}$$

$$9/34 = \mathbf{0.264}$$

$$12/34 = \mathbf{0.353}$$

$$5/34 = \mathbf{0.147}$$

- stem and leaf display: lecture 6 pg no. 42...
- q2(part b): for its idea please refer to lec. 1 pg 4

How to Calculate the Arithmetic Mean

A mathematical concept that usually is taught in elementary school, the arithmetic mean gives an average measurement for a given set of numbers. Being able to find a mean is very useful in everyday activities, such as figuring grades, setting a budget, calculating a business' financial output or determining an athlete's performance statistics.

Instructions

1

Write down the numbers for which you want to determine a mean. For instance, you might make a list of your electric bills for the past six months.

2

Add the numbers in the set that you wrote down in step one. For instance, you might add the following monetary values representing your electric bills:

$$120 + 150 + 135 + 100 + 90 + 125 = 720$$

3

Divide your answer from step two by the number of values in your set. Since you had six values in this set, you would perform the following equation to find the mean:

$$720 / 6 = 120.$$

Therefore, your average monthly electric bill would be 120 dollars.

Geometric Mean:

Geometric mean of a set of n positive values $x_1, x_2, \dots, x_n$ is defined as the positive n^{th}

Root of their product i.e.

$$G = (X_1 * X_2 * X_3 * \dots * X_n)^{1/n}$$

Geometric mean for the following data:

18 19 19 19 19 20 20 20 20 20 21 21 21 21 22 23 24 27 30 36

$$G = (X_1 * X_2 * X_3 * \dots * X_n)^{1/n}$$

$$G = (18 * 19 * \dots * 36)^{1/20}$$

$$\mathbf{G = 21.6607}$$

Alternative method for solving GM.

$$G.M = \text{anti log } \frac{\sum_{i=1}^n \log X_i}{n}$$

$$G = \text{anti log } \frac{1}{20} \sum_{i=1}^{20} (1.255273 * 1.278754 * \dots * 1.556303)$$

$$G = \text{anti log}(1.335673)$$

$$\mathbf{G = 21.6607}$$

Harmonic

Mean

66, 73, 68, 54, 25, 38, 67, 69, 74, 53, 52, 72, 55, 75, 37, 24, 13, 12, 11, 26, 39, 23

Total Numbers: 22

Harmonic Mean: 32.24555

Q2

ANS:(b)

Nominal

Ordinal

Ratio

Ratio

may b wrong.