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DEP: BS(SE)

SUBJECT : STATASTICS

SUBMITTED TO : DAUD KHAN

Q1: Construct a grouped frequency distribution table and cumulative frequency curve (Ogive) for the observations below.

423, 369, 387, 411, 393, 394, 371, 377, 389, 409, 392, 408, 431, 401, 363, 391, 405, 382, 400, 381, 399, 415, 428, 422, 396, 372, 410, 419, 386, 390

Battery life, minutes (x)	Frequency (f)	Cf.<	Cf.>
360–369	2	2	30
370–379	3	5	28
380–389	5	10	25
390–399	7	17	20
400–409	5	22	13
410–419	4	26	8
420–429	3	29	4
430–439	1	30	1
Total	**30**		

35
30
25
20
15
10
5
0

359.5 369.5 379.5 389.5 399.5 409.5 419.5 429.5

C·B
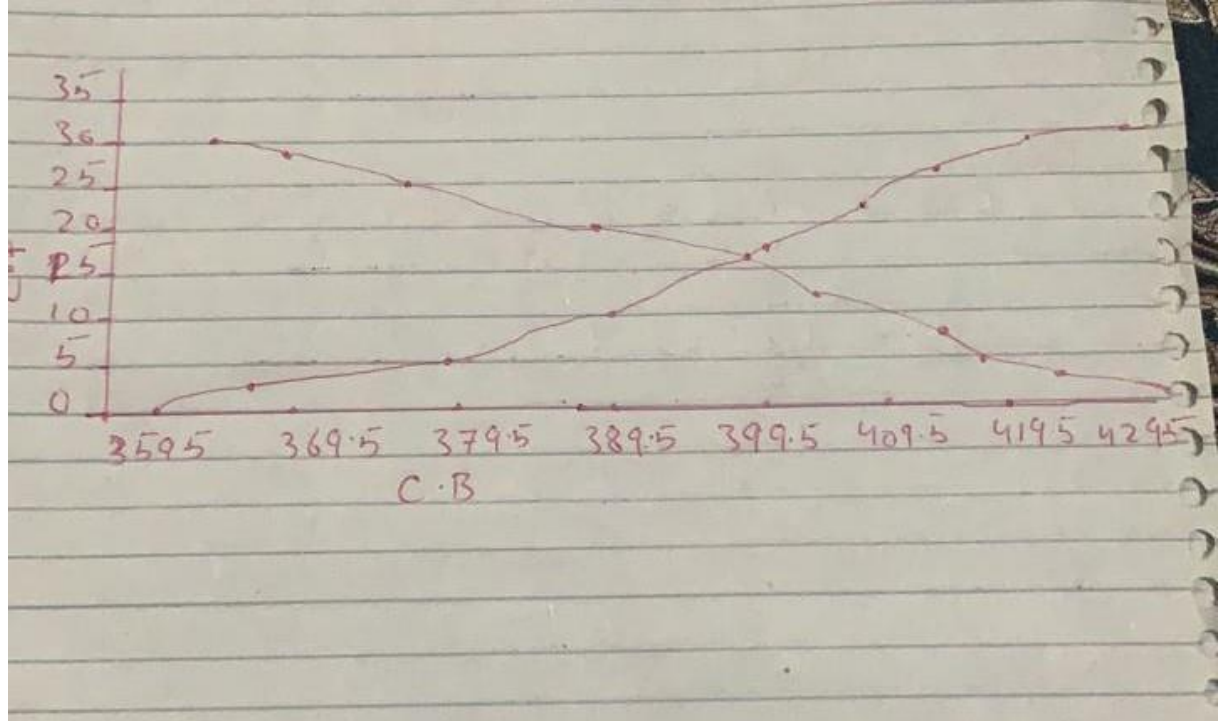
class	Tally	Frequency (f)	c.f	class.B	x	fx
360–369	2	2	2	359.5-369.5	364.5	729
370–379	3	3	5	369.5-379.5	374.5	1123.5
380–389	5	5	10	379.5-389.5	384.5	1922.5
390–399	7	7	17	389.5-399.5	394.5	2761.5
400–409	5	5	22	399.5-409.5	404.5	2022.5
410–419	4	4	26	409.5-419.5	414.5	1658
420–429	3	3	29	419.5-429.5	424.5	1273.5
430–439	1	1	30	429.5-439.5	434.5	434.5
Total		30				10651.5

Q2: For the observations given in **Q1** calculate Mean and Geometric Mean.

MEAN FORMULA:

Fx/f

ANSWER:

10651.5/30 = 355.05

GM FORMULA:

Antilog(1/f f.logx) = antilog (1/30 77.25)

Antilog(77.25/30)

Antilog(2.575)

GM = 392.6

Log x	f. log x
2.56	5.12
2.57	7.17
2.58	12.9
2.59	18.13
2.60	13
2.61	10.44
2.62	7.86
2.63	2.63
	77.25

Q3: Define the following terms

a) Population and Sample

POPULATION:

A population or a statistical population is a collection or set of all possible observations whether finite or infinite, relevant to some characteristics of interest.

A statistical population may be real such as the heights of all the college students or hypothetical such as all the possible outcomes from the toss of a coin.

The number of observations in a finite population is called the size of the population denoted by the letter "N".
SAMPLE:
A sample is a part or a subset of a population. The number of observations included in a sample is called the size of the sample and is denoted by the letter "n".

The information derived from a sample data is used to draw conclusions about the population.

b) The Range
in statistics, the range of a set of data is the difference between the largest and smallest values.

The range is the most obvious measure of dispersion and is the difference between the lowest and highest values in a dataset. The range is useful for showing the spread within a dataset and for comparing the spread between similar datasets.

c) The Weighted Arithmetic Mean

The weighted arithmetic mean is a measure of central tendency of a set of quantitative observations when not all the observations have the same importance. ... The weighted arithmetic mean equals the sum of observations multiplied by their weights divided by the sum of their weights.

THE END