STA 301

Lec 1

Statics:-

Arrangment of numbers.

Meaning of Data:-

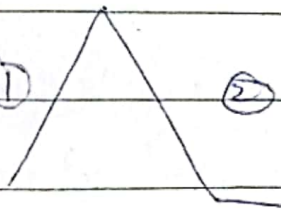
first of all learn in this subject Data

variables:-

which anything change with time

Ex:-

Enviment:-



Quantitative

Qualitative

Talk about Quanti Ex chawal, ghandam

Talk about Quality oil, matikatyl, liqued chizo ki bait krain to Quality.

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Discreat and continuous variable:-

Discreat Mean:- جوڑ ٹوٹ ہے piece and short

Eaxpl:- Moter bike : Moter

continuous variable

It's variable like continu do not never stop.

Example:- Time

Measurement Scales:-

(1) Nominal scale:-

Example:- class (set) A matirial in class A, class B, class C ID called Nominal scale:-

(2) ordinal or Ranking scale:-

Ranking

virat kholi ---- 1 Rank

Babar azam ---> Rank

(3) Interval scale:-

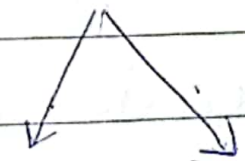
check your fever in thermometer. scale is called Interval Scale..

Example:- check weather Scales is called Interval scale..

) Ratio Scale:-

Now you go to shop fill the glass cylender like When scale use Ratio scale. V/W

Last Topic name errors



Biased :-

called the 12 or 10 Type motirial in out of error is called Biased.

Random

Jub alag alag error nikalyn gy to

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Lec #2

Primary Data:-

not apply process, not apply formula Jo direct data diya jata h primary Data kehlyta h.

Example:-

Koi kehta h ky family ky members ky name likh ky dain. Koi yahi kehta ko chata h kon bara h.

Secondary Data:-

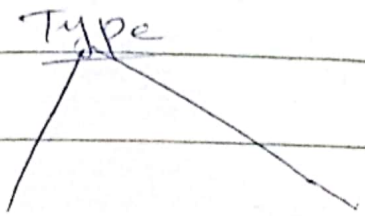
process krna Bank provide krna.

population:-

class/clay ki Tadat example:- number of stars Jo count na ho

A population consists of the totality of the observations which we are concerned for example:-

The heights of students in college.



Finite population — Infinite population

No of student in pu — no of star

limited — of sky

unlimited

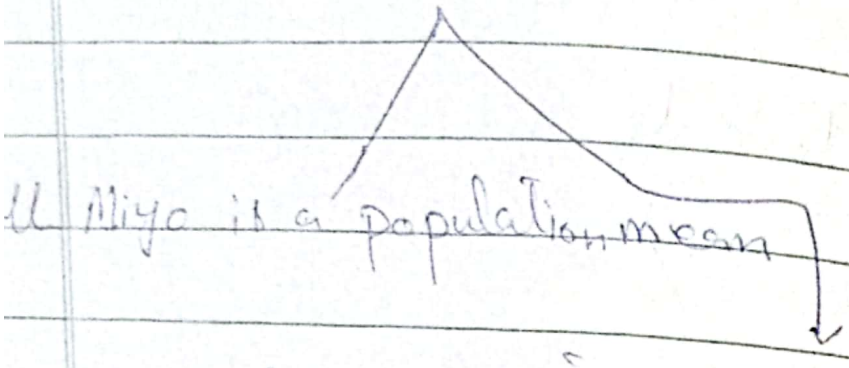
Sample:-

Example:- Study py aik dag pleasy rahy holy aos mousy check krny ky liy channel nikally. dosy population hogi aur channel sample hongan.

"A Sample is the representive part of the population."

Parameter:-

A numerical quantity calculated from population is called parameter.



σ is population standard deviation.

Statistic:-

Both ko milakar we bolte statistic.

X ⟶ Sample Means

S ⟶ Sample standard deviation

Sampling:-

is a procedure of selecting samples from the population

Three Types of Sampling:-

Sampling Design (study nature)
Sampling Unit (formation parameter, tool)
Sampling Frame (set data)

Example:- ⟶ Pg (13)

Sampling error ?

phly multiply krna X x f
Then Sum f and Sum fx

Ye Sub kry ky bad aygy Population Mean

$$\text{Myo } \mu = \frac{\Sigma fx}{\Sigma f}$$

x	f	fx
13	6	78
14	61	854
15	270	4050
16	491	7856
17	433	2601
18	15	270
19	4	76
Σ	1280	15785

Most Important

$$\mu = \frac{\Sigma fu}{\Sigma f}$$

$$= \frac{15785}{1000}$$

$$= 15.785$$

and given Sample no's

14, 15, 16, 15, 16, 16, 17, 15, 16, 16

Sum all nos The count no :

$$\bar{X} \quad \frac{156}{10} = 15.6$$

ab formula tgayn

Sampling error

$$= \bar{X} - \mu$$

$$= 15.6 - 15.785$$

$$= -0.185$$

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Lecture #3

Tabulation:

Type of Data

Qualitative

Quantitative

univariate frequency table

Percentages

Pie chart

Bar chart, Bar graph, column chart

Bivariate

Component Bar chart

Multiple Bar chart

Discrete

Continuous

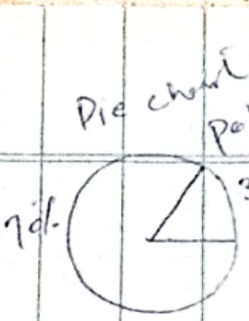
Frequency Distribution

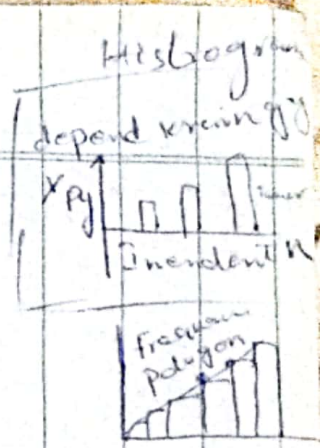
Line chart

Histogram

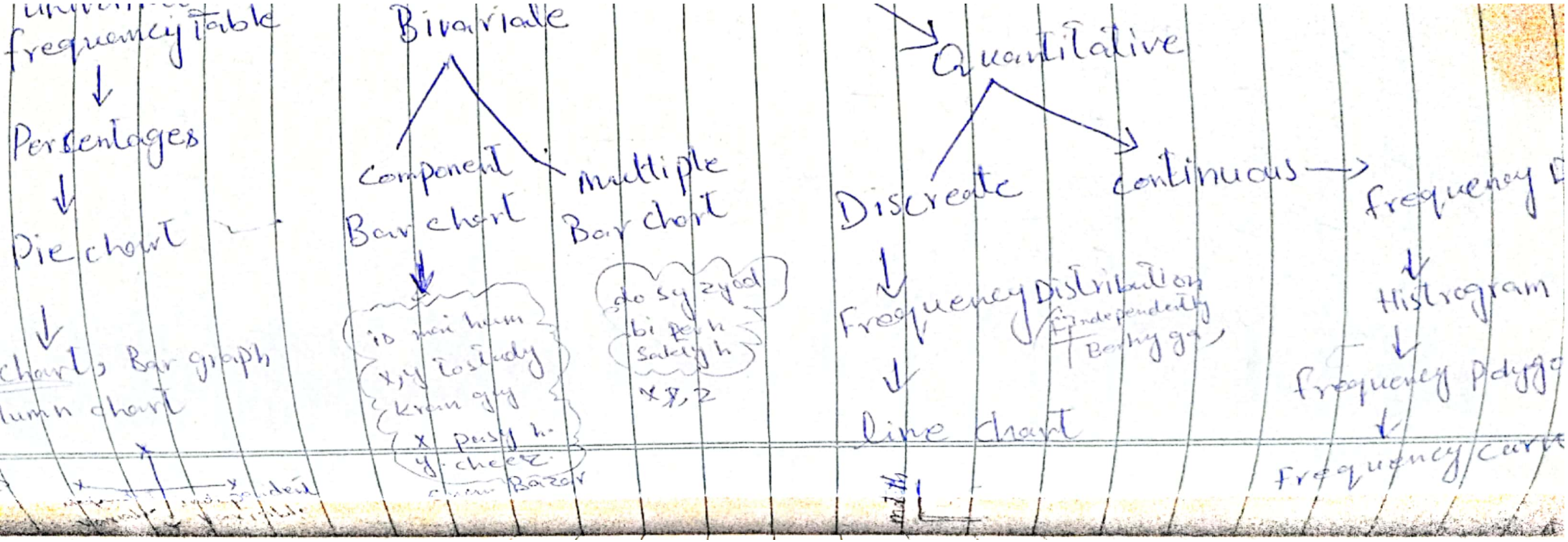
Frequency Polygon

Frequency curve





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frequency table
Percentages
Pie chart
Bivariate
Component Bar chart
Multiple Bar chart
Quantitative
Discreate
continuous
Frequency Distribution
Histogram
Line chart

3/11/501

Lect# 4

Mid point:-

class interval	$\frac{50}{2}=25$	add krny
20 add 30	45	h Then
40 — 56	65	devided by
60 — 70	65	2
80 — 50		

Relative frequency and cumulative frequency

class interval	f	Relative frequency	cumulative frequency f/c
20 — 30	2	$\frac{2}{20}=0.1$	2
40 — 50	4	$\frac{4}{20}=0.2$	6
60 — 70	6	$\frac{6}{20}=0.3$	12
80 — 50	8	$\frac{8}{20}=0.4$	20
	20	1	

phly f ko Sum krna h. 20

Relative frequency mai frequency ko Total Sum of frequency py devide krain gyn.

formula:-

Relative frequency = $\frac{f}{\text{total } f} = \frac{f}{\Sigma f}$

cumulative frequency:-

mai phly f ka 2 likhyn gain. The 2 ky sath nichy wali rakam add krain gyn 2+4 = 6 Then ab 6+6=12 Then 12+8=20 is terha cumulative frequency nikally h.

Kesy pata chaly ga ky cumulative frequency Thk h?

Ans ⇒

f ki kemat aur cumulative ki kemat iik jesi hogi. Tub cumulative frequency Thk hogi

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Date:

Lec # 5

find class Boundaries (When class interval given)

Page (40)

Given:-

class limits	is mai hum ny is rakam ko Subtract Krni h. Then dusra Krna h 2 py
0.51 — 0.70	
0.71 — 0.90	
0.91 — 1.10	
1.11 — 1.30	
1.51 — 1.70	
1.71 — 1.90	

$0.71 - 0.70$

0.01

$\frac{0.01}{2} = 0.005$

Sol:-

Jo hum ny 0.005 nikala h. ~~t~~ os ko hy phly colum ky sath Subtract Krain gy n and 2nd colum ky Sath add Krain gy n.

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class limits	class Boundaries
0.51 — 0.70	0.505 — 0.705
0.71 — 0.90	0.705 — 0.905
0.91 — 1.10	0.905 — 1.105
1.11 — 1.30	1.105 — 1.305
1.31 — 1.50	1.305 — 1.505
1.51 — 1.70	1.505 — 1.705
1.71 — 1.90	1.705 — 1.905

0.005 - 0.51 = 0.505,

check kesy krnon h key Thk h?

Series dekhni h key Thk h?
Thk h Tu Q Thk h.

class Boundaries kub use krty h
jub hum findout krain gy
mode
midian