**1.*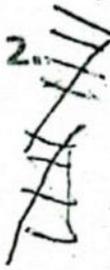* The following data shows the number of members in various families. Construct frequency distribution. Also find cumulative frequencies.

9, 11, 4, 5, 6, 8, 4, 3, 7, 8, 5, 5, 8, 3, 4 ,9, 12, 8, 9, 10, 6, 7, 7, 11, 4, 4, 8, 4, 3, 2, 7, 9, 10, 9, 7, 6, 9, 5,7.

Solution:

Frequency distribution of number of family members.

Number of members	Talley marks	Frequency	Commutative frequency
2	I	1	1
3	III	3	1 + 3 = 4
4	NHI I	6	4 + 6 = 10
5	IIII	4	10 + 4 = 14
6	III	3	14 + 3 = 17
7	NHI I	6	17 + 6 = 23
8	NHI	5	23 + 5 = 28
9	NHI I	6	28 + 6 = 34
10	II	2	34 + 2 = 36
11	II	2	36 + 2 = 38
12	I	1	38 + 1 = 39
	Total	39	

2. The following data has been obtained after weighing 40 students of class V. Make a frequency distribution taking class interval size is 5. Also find the class boundaries and midpoints.

34, 26, 33, 32, 24, 21, 37, 40, 41, 28, 31, 33, 34, 37, 23, 27, 31, 31, 36, 29, 35, 36, 37, 38, 22, 27, 28, 29, 31, 35, 35, 40, 21, 32, 33, 27, 29, 30, 23

Also make a less than cumulative frequency distribution. (Hint: Make classes 20 – 24, 25 – 29 … …).

Solution:

Frequency Distribution

Class Limits	Talley marks	Frequency
20 – 24	IHI I	6
25 – 29	IHI IHI	10
30 – 34	IHI IHI II	12
35 – 39	IHI IIII	9
40 – 44	III	3
Total		40

less than is taken then

Cumulative Frequency Distribution

Class boundaries	Frequency f	Cumulative Frequency	Class Boundaries	Cumulative Frequen
14.5 – 19.5	0	0	Less than 19.5	0
19.5 – 24.5	6	$0 + 6 = 6$	Less than 24.5	6
24.5 – 29.	10.	$6 + 10 = 16$	Less than 29.5	16
29.5 – 34.5	13	$16 + 13 = 29$	Less than 34.5	29
34.5 – 39.5	8	$29 + 8 = 37$	Less than 39.5	37
39.5 – 44.5	3	$37 + 3 = 40$	Less than 44.5	40

3. From the following data representing the salaries of 30 teachers of a school. Make a frequency distribution taking class interval size of Rs. 100, 450, 500, 550, 580, 670, 1200, 1150, 1120, 950, 1130, 1230, 890, 780, 760, 670, 880, 890, 1050, 980, 970, 1130, 1220, 760, 690, 710, 750, 1120, 760, 1240.

(Hint: Make classes 450-549, 550-649.....).
Frequency Distribution Table

Class Limits	Talley marks	Frequency
450 – 549	II	2
550 – 649	II	2
650 – 749	IIII	4
750 – 849	NN	5
850 – 949	III	3
950 – 1049	IIII	4
1050 – 1149	NN	5
1150 – 1249	NN	5
	Total =	30

4. The following data shows the daily load shedding duration in hours in 30 localities of a certain city. Make a frequency distribution of the load shedding duration taking 2 hours as class interval size and answer the following questions.
6, 12, 5, 7, 8, 3, 6, 7, 10,

(a) Find the most frequent load shedding hours?

(b) Find the least load shedding intervals?
(Hint: Make classes 2-3, 4-5, 6-7 ....)

Frequency Distribution Table

Class Limits	Talley marks	Frequency
2 – 3	II	2
4 – 5	I	1
6 – 7	NN IIII	9
8 – 9	NN	5
10 – 11	NN I	6
12 – 13	NN	5
14 – 15	III	3
	Total =	31

Q.(a) Find the most frequent load shedding hours.
Ans. 6 – 8 7

Q.(b) Find the least load shedding intervals.
Ans. 4 – 5

5. Construct a Histogram and frequency Polygon for the following data showing weights of students in kg.

Weights	Frequency/ No. of students
20 – 24	5
25 – 29	8
30 – 34	13
35 – 39	22
40 – 44	15
45 – 49	10
50 – 54	8

Class Boundaries	Frequency
19.5 – 24.5	5
24.5 – 29.5	8
29.5 – 34.5	13
34.5 – 39.5	22
39.5 – 44.5	15
44.5 – 49.5	10
49.5 – 54.5	8
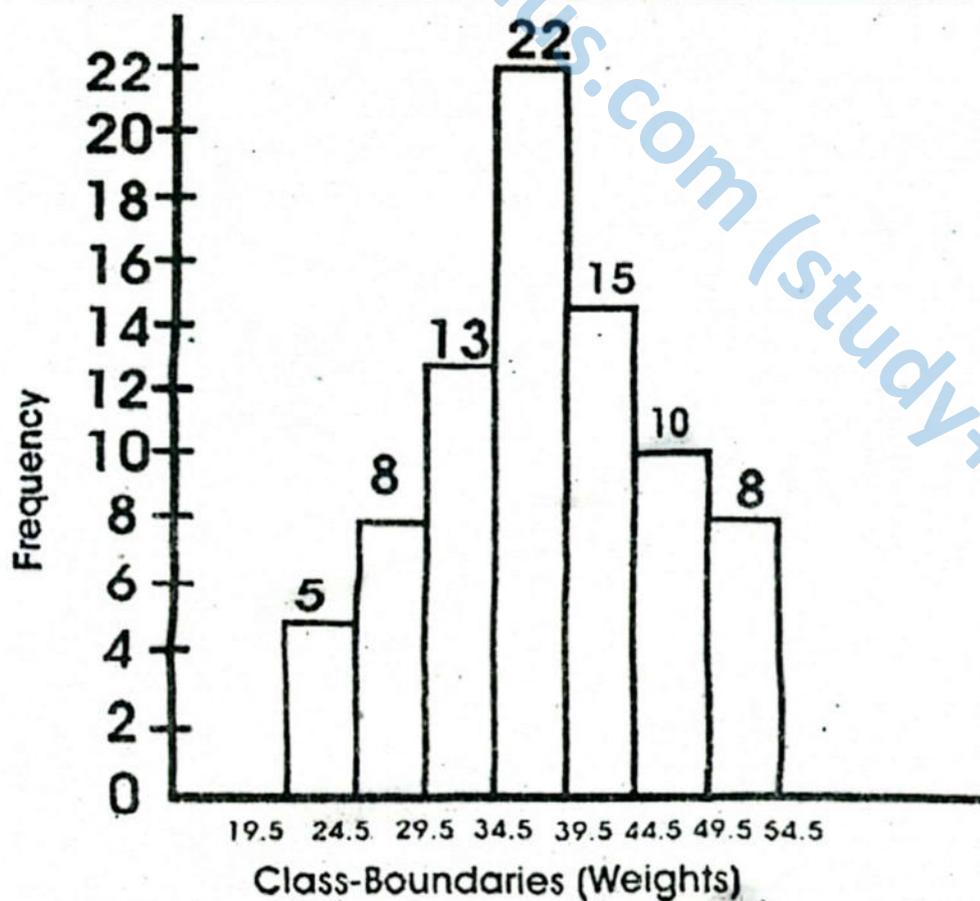
We take two additional with the same class limit.

Class Limits	Class Boundaries	Mid points	Frequency
		17	0
20 − 24	19.5 − 24.5	22	5
25 − 29	24.5 − 29.5	27	8
30 − 34	29.5 − 34.5	32	13
35 − 39	34.5 − 39.5	37	22
40 − 44	39.5 − 44.5	42	15
45 − 49	44.5 − 49.5	47	10
50 − 54	49.5 − 54.5	52	8
55 − 59	54.5 − 59.5	57	0

Polygon