(3) Frequency Distribution Series and Range.

following two methods are used to find out the range of the frequency distribution series.

Method - I.

Mid-values of the class intervals are found. Difference between the highest and the lowest mid-value would be the range of the series. Frequencies of the distribution are not taken into account.

Illus:- Find out range the coefficient of range of the following series.

Size	5-10	10-15	15-20	20-25	25-30
Frequency	4	9	15	30	40.

Soln

Size.	Mid value	frequency.
5-10	7.5	4
10-15	12.5	9
15-20	17.5	15
20-25	22.5	30
25-30	27.5	40

Range(R) : H - L

: 27.5 - 7.5 = 20

Coefficient of Range (CR) : $\frac{H-L}{H+L}$

$= \frac{27.5-7.5}{27.5+7.5} = \frac{20}{35} = 0.57.$

Range = 20.

Coefficient of Range = 0.57. ∴

Method - II

According to this method, we find the difference between lower limit of the first class interval and upper limit of the last class interval in the series. Difference between these value would be the range of the series. That is;

R = Upper limit of the Last class interval − lower limit of the first class interval.

Marks	20-29	30-39	40-49	50-59	60-69
No of student	8	12			

Sol/n. This is an inclusive series. For the estimation of range, this

must be converted into exclusive Series, as below:

Marks	No. of students
19.5 - 29.5	8
29.5 - 39.5	12
39.5 - 49.5	20
49.5 - 59.5	7
59.5 - 69.5	5

$L = 19.5$ $H = 69.5$.

Range $= 69.5 - 19.5 = 50$.

Coefficient of Range (CR) $= \frac{69.5 - 19.5}{69.5 + 19.5}$

$= \frac{50}{89} = 0.562$