

Mode - 5

→ Calculation of mode in case of Inclusive Series.

Illustration

C.g.	10-19	20-29	30-39	40-49	50-59	60-69	70-79
Frequency	10	12	18	30	16	6	8

Solⁿ For the calculation of mode, inclusive series are first to be converted into exclusive series as below.

C-g	Exclusive Class Interval	frequency
10-19	9.5-19.5	10
20-29	19.5-29.5	12
30-39	29.5-39.5	(18) f_0
40-49	39.5-49.5	(30) f_1
50-59	49.5-59.5	(16) f_2
60-69	59.5-69.5	6
70-79	69.5-79.5	8

A glance at the above table reveals that 39.5-49.5 is the modal class interval. The actual value of mode is

$$f_1 = 30 \quad f_0 = 18, \quad f_2 = 16$$

$$l_1 = 39.5 \quad i = 10.$$

$$Z = l_1 + \frac{f_1 - f_0}{2f_1 - f_0 - f_2} \times i$$

$$= 39.5 + \frac{30 - 18}{2(30) - 18 - 16} \times 10$$

$$= 39.5 + \frac{12}{60 - 18 - 16} \times 10$$

$$= 39.5 + \frac{12}{60 - 34} \times 10$$

$$= 39.5 + \frac{12}{26} \times 10$$

$$= 39.5 + \frac{120}{26}$$

$$= 39.5 + 4.62 =$$

$$= 44.12$$

$$\text{Mode} = 44.12$$

Thank You.