

Median - (9).

Partition Value: Quartile.

The value that divides the series into more than two parts is called Partition Value.

Estimation of Q_1 and Q_3

Quartile value (Q_1 and Q_3) are estimated differently for different sets of series, as under.

(i) Individual and Discrete Series.
Formula,

$$Q_1 = \text{Size of } \left(\frac{N+1}{4}\right)^{\text{th}} \text{ item of the series.}$$

$$Q_3 = \text{Size of } 3\left(\frac{N+1}{4}\right)^{\text{th}} \text{ item of the series.}$$

(ii) Frequency Distribution Series.

$$\text{Class interval of } Q_1 = \frac{N}{4}^{\text{th}} \text{ item}$$

$$\text{Class interval of } Q_3 = 3\left(\frac{N}{4}\right)^{\text{th}} \text{ item}$$

Formula.

$$Q_1 = L_1 + \frac{\left(\frac{N}{4} - c\right)}{f} \times i$$

$$Q_3 = L_1 + \frac{\left[3\left(\frac{N}{4}\right) - c\right]}{f} \times i$$

→ Calculation of Deciles in Individual and Discrete Series

Formula.

$$D_1 = \text{Size of } \left(\frac{N+1}{10}\right)^{\text{th}} \text{ item}$$

$$D_4 = \text{Size of } 4\left(\frac{N+1}{10}\right)^{\text{th}} \text{ item.}$$

$$D_9 = \text{Size of } 9\left(\frac{N+1}{10}\right)^{\text{th}} \text{ item.}$$

→ Calculation of Deciles in Frequency Distribution Series.

class interval of D_1 = Size of $\left(\frac{N}{10}\right)^{th}$ items

class interval of D_4 = Size of $4\left(\frac{N}{10}\right)^{th}$ item

class interval of D_9 = Size of $9\left(\frac{N}{10}\right)^{th}$ item

Formula.

$$D_1 = l_1 + \frac{\left[\frac{N}{10} - c\right]}{f} \times i$$

$$D_4 = l_1 + \frac{\left[4\left(\frac{N}{10}\right) - c\right]}{f} \times i$$

$$D_9 = l_1 + \frac{\left[9\left(\frac{N}{10}\right) - c\right]}{f} \times i$$

Thank You ==