

Unit 2 · Measures of Dispersion

⇒ Formulas :

Sr. No.	Statistical Measure	Formula for Raw data	Formula for Frequency Distribution
1.	Range	$R = L - S$ $L \Rightarrow$ Largest value $S \Rightarrow$ smallest value	$CR = \frac{L - S}{L + S}$
2.	Quartile Deviation (QD)	$QD = \frac{Q_3 - Q_1}{2}$ where $Q_1 = \left(\frac{n+1}{4}\right)^{\text{th}}$ entry $Q_3 = 3\left(\frac{n+1}{4}\right)^{\text{th}}$ entry	$QD = \frac{Q_3 - Q_1}{2}$ where $Q_1 = \left(\frac{N+1}{4}\right)^{\text{th}}$ entry $Q_3 = 3\left(\frac{N+1}{4}\right)^{\text{th}}$ entry
3.	Co-efficient of QD (CQD)	$CQD = \frac{Q_3 - Q_1}{Q_3 + Q_1}$	$CQD = \frac{Q_3 - Q_1}{Q_3 + Q_1}$
4.	Mean	$\frac{\sum x}{n}$	$\frac{\sum fx}{N}$ where $N = \sum f$
5.	Mean Deviation (M.D)	$\frac{\sum x - \bar{x} }{n}$	$\frac{\sum f \cdot x - \bar{x} }{N}$
6.	Standard Deviation (S.D)	$\sqrt{\frac{\sum (x - \bar{x})^2}{n}}$	$\sqrt{\frac{\sum f \cdot (x - \bar{x})^2}{N}}$