

Unit 2. Measures of Dispersion

⇒ Formulas :

Sr. No.	Statistical Measure	Formula for Raw data	Formula for Frequency Distribution
7.	Standard Deviation (S.D)	$\sqrt{\frac{\sum x^2}{n} - (\bar{x})^2}$	$\sqrt{\frac{\sum fx^2}{N} - (\bar{x})^2}$
8.	Coding Method for S.D.	$\bar{u} = \frac{\sum u}{n}$ $\sigma_u = \sqrt{\frac{\sum u^2}{n} - (\bar{u})^2}$ $\sigma_x = c \times \sigma_u$	$\bar{u} = \frac{\sum fu}{N}$ $\sigma_u = \sqrt{\frac{\sum fu^2}{N} - (\bar{u})^2}$ $\sigma_x = c \times \sigma_u$
9.	S.D for Combined groups	<p>a) $\bar{x} = \frac{n_1 \cdot \bar{x}_1 + n_2 \cdot \bar{x}_2}{n_1 + n_2}$</p> <p>b) $d_1 = \bar{x}_1 - \bar{x}$</p> $d_2 = \bar{x}_2 - \bar{x} $	<p>c) $\sigma = \sqrt{\frac{n_1(\sigma_1^2 + d_1^2) + n_2(\sigma_2^2 + d_2^2)}{n_1 + n_2}}$</p>
10.	Variance (V)	$V = \sigma^2$	
11.	Co-efficient of Variance (CV)	$CV = \frac{\sigma}{\bar{x}} \times 100$	