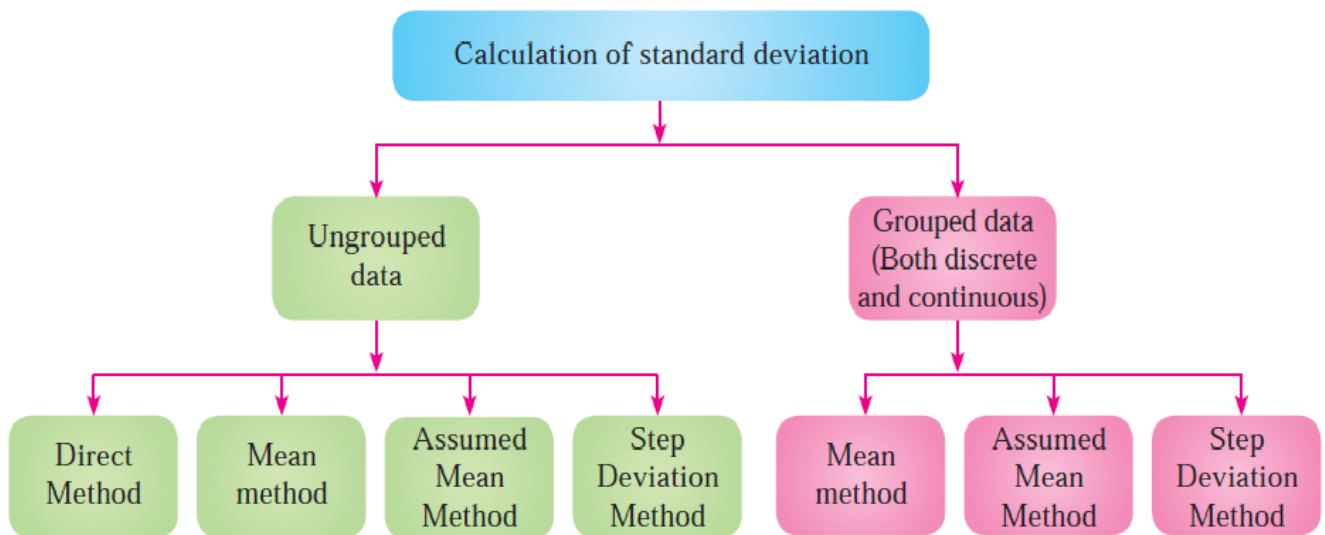


Calculation of Standard Deviation:

The positive square root of Variance is called **Standard deviation**. That is, standard deviation is the positive square root of the mean of the squares of deviations of the given values from their mean. It is denoted by σ .

Standard deviation gives a clear idea about how far the values are spreading or deviating from the mean.

$$\text{Standard deviation } \sigma = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n}}$$



- While computing standard deviation, arranging data in ascending order is not mandatory.
- If the data values are given directly then to find standard deviation we can use the

$$\text{formula } \sigma = \sqrt{\frac{\sum x_i^2}{n} - \left(\frac{\sum x_i}{n}\right)^2}$$

- If the data values are not given directly but the squares of the deviations from the mean of each observation is given then to find standard deviation we can use the

$$\text{formula } \sigma = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n}}$$

We can use any of the above methods for finding the standard deviation