Standard deviation:

Standard deviation (σ) is defined as the square root of the arithmetic mean of the square of the deviation of the values taken from mean.
For an individual series

Example:

Marks	Frequency (f)	Mid value (x)	X^2	fx	$\bar{x} = \frac{\sum fx}{\sum f}$	$\lvert x - \bar{x} \rvert$	$(x - \bar{x})^2$
0-10	5	5	25	25	27	22	484
10-20	8	15	225	120	27	12	144
20-30	15	25	625	375	27	2	4
30-40	16	35	1225	560	27	8	64
40-50	6	45	2025	270	27	18	324
	$= \sum_{n} f = 50$		$\sum x^2 = 4125$	$\sum fx = 1350$			$\sum (x - \bar{x})^2 = 1020$

From actual mean:

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

Assumed mean method:

$$\sigma = \sqrt{\frac{\sum d^2}{n} - \left(\frac{\sum d}{n}\right)^2}$$ Where d=x-A (A is assumed mean)

Method based on actual data

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

Variance:

It is square of the standard deviation
Standard deviation = σ^2