

Formulae for Mean and Standard Deviation – OCR Board

For a list of numbers	For frequency distributions
<p>Mean, $\bar{x} = \frac{\sum x}{n}$</p> <p>(Not given in the formulae booklet)</p>	<p>Mean, $\bar{x} = \frac{\sum fx}{\sum f}$</p> <p>(Not given in the formulae booklet)</p>
<p>$S_{xx} = \sum (x_i - \bar{x})^2$ $= \sum x_i^2 - \frac{(\sum x_i)^2}{n}$</p> <p>(Not given in the formulae booklet)</p>	<p>$S_{xx} = \sum f x_i^2 - \frac{(\sum f x_i)^2}{n}$ $= \sum f x_i^2 - n \bar{x}^2$</p> <p>(Not given in the formulae booklet)</p>
<p>Variance, $\sigma^2 = \frac{\sum (x - \bar{x})^2}{n}$</p> <p style="text-align: center;">$= \frac{\sum x^2}{n} - \bar{x}^2$</p> <p style="text-align: center;">$= \frac{S_{xx}}{n}$</p> <p>(Not given in the formulae booklet)</p>	<p>Variance, $\sigma^2 = \frac{\sum f (x - \bar{x})^2}{\sum f}$</p> <p style="text-align: center;">$= \frac{\sum f x^2}{\sum f} - \bar{x}^2$</p> <p style="text-align: center;">$= \frac{S_{xx}}{n}$</p> <p>(Not given in the formulae booklet)</p>
<p>Standard Deviation, $\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{n}}$</p> <p style="text-align: center;">$= \sqrt{\frac{\sum x^2}{n} - \bar{x}^2}$</p> <p style="text-align: center;">$= \sqrt{\frac{S_{xx}}{n}}$</p> <p>(Given in the formulae booklet)</p>	<p>Standard Deviation, $\sigma = \sqrt{\frac{\sum f (x - \bar{x})^2}{\sum f}}$</p> <p style="text-align: center;">$= \sqrt{\frac{\sum f x^2}{\sum f} - \bar{x}^2}$</p> <p style="text-align: center;">$= \sqrt{\frac{S_{xx}}{n}}$</p> <p>(Given in the formulae booklet)</p>