

## Formulae for Mean and Standard Deviation – AQA Board

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