Formulae for Mean and Standard Deviation – Edexcel Board

For a list of numbers	For frequency distributions
Mean, $\bar{x} = \dfrac{\sum x}{n}$ (Not given in the formulae booklet)	Mean, $\bar{x} = \dfrac{\sum fx}{\sum f}$ (Not given in the formulae booklet)
$S_{xx} = \sum (x_i - \bar{x})^2$ $\quad = \sum x_i^2 - \dfrac{(\sum x_i)^2}{n}$ (Given in the formulae booklet) Variance, $\sigma^2 = \dfrac{\sum (x - \bar{x})^2}{n}$ $\quad = \dfrac{\sum x^2}{n} - \bar{x}^2$ $\quad = \dfrac{S_{xx}}{n}$ (Not given in the formulae booklet)	$S_{xx} = \sum f x_i^2 - \dfrac{(\sum f x_i)^2}{n}$ $\quad = \sum f x_i^2 - n\bar{x}^2$ (Not given in the formulae booklet) Variance, $\sigma^2 = \dfrac{\sum f(x - \bar{x})^2}{\sum f}$ $\quad = \dfrac{\sum fx^2}{\sum f} - \bar{x}^2$ $\quad = \dfrac{S_{xx}}{n}$ (Not given in the formulae booklet)
Standard Deviation, $\sigma = \sqrt{\dfrac{\sum (x - \bar{x})^2}{n}}$ $\quad = \sqrt{\dfrac{\sum x^2}{n} - \bar{x}^2}$ $\quad = \sqrt{\dfrac{S_{xx}}{n}}$ (Given in the formulae booklet)	Standard Deviation, $\sigma = \sqrt{\dfrac{\sum f(x - \bar{x})^2}{\sum f}}$ $\quad = \sqrt{\dfrac{\sum fx^2}{\sum f} - \bar{x}^2}$ $\quad = \sqrt{\dfrac{S_{xx}}{n}}$ (Not given in the formulae booklet)