Formula for a sample standard deviation

$s = \sqrt{\dfrac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}}$	where $\bar{x}$ is the sample mean and $\sum_{i=1}^{n}(x_i - \bar{x})^2$ can be explained as, replace the letter i with values from 1 all the way up to n, calculating the equation each time and then add them all up

For our sample, this becomes:

$$s = \sqrt{\frac{((141-141.1667)^2 + (155-141.1667)^2 + (130-141.1667)^2 + (146-141.1667)^2 + (141-141.1667)^2 + (134-141.1667)^2)}{6-1}}$$

$$s = \sqrt{\frac{(-0.1667)^2 + (13.8333)^2 + (-11.1667)^2 + (4.8333)^2 + (-0.1667)^2 + (-7.1667)^2}{5}}$$

$$s = \sqrt{\frac{0.0278 + 191.3602 + 124.6952 + 23.3608 + 0.0278 + 51.3616}{5}}$$

$$s = \sqrt{\frac{390.8334}{5}}$$

$$s = \sqrt{78.1667}$$

$$s = 8.841192...$$

$$s = 8.84 \quad (2\,d.p.)$$

The tables below show the use of formulae to demonstrate this:

	Data	Data - Mean	(Data -Mean)^2
	141	-0.1667	0.0278
	155	13.8333	191.3611
	130	-11.1667	124.6944
	146	4.8333	23.3611
	141	-0.1667	0.0278
	134	-7.1667	51.3611
Sum	847	0.0000	390.8333
Divide by	6		5
Mean	141.1667		78.1667
Std Dev	8.8412	**Square Root**	8.8412
Variance	78.16667		

	Value	Value - Mean	(Value -Mean)^2
	141	=B2-B$10	=C2*C2
	155	=B3-B$10	=C3*C3
	130	=B4-B$10	=C4*C4
	146	=B5-B$10	=C5*C5
	141	=B6-B$10	=C6*C6
	134	=B7-B$10	=C7*C7
Sum	=SUM(B2:B7)	=SUM (C2:C7)	=SUM(D2:D7)
Divide by	=COUNT(B2:B7)		=COUNT(B2:B7)-1
Mean	=B8/B9		=D8/D9
Std Dev	=STDEV.S(B2:B7)	**Square Root**	=SQRT(D10)
Variance	=VAR.S(B2:B7)		