

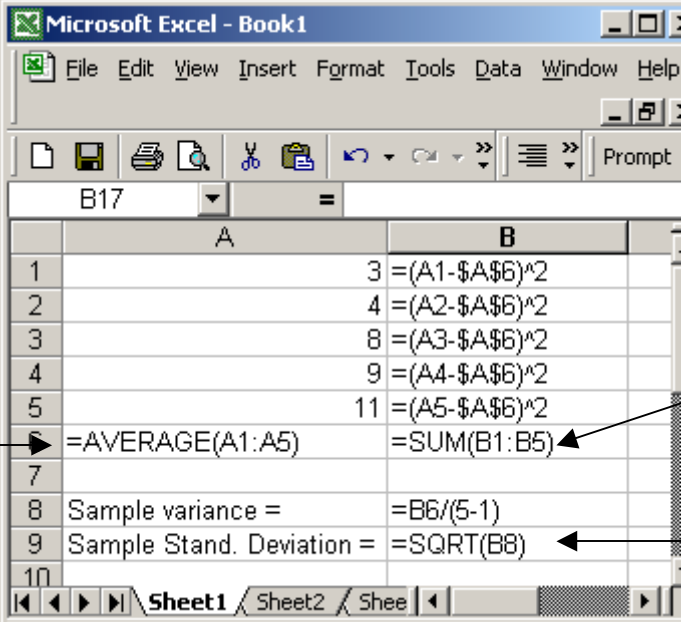
Excel for Calculating the Sample Variance and Standard Deviation Without Using Excel Functions

Data: 3, 4, 8, 9, 11

Using Defining Formula

Step 1: Enter the data into the Excel spreadsheet as in the following Excel image in the first five cells of column A.

Step 2: In cell B1, enter the formula: $=(A1-7)^2$ or $=(A1-\$A\$6)^2$ which means the square of the deviation of the data value A1 deviate from A6. Do the same thing for the rest of the four cells below. The following four cells can also be filled by clicking and dragging the mouse down to paste the formula into the four cells. To do formula pasting see page 3.

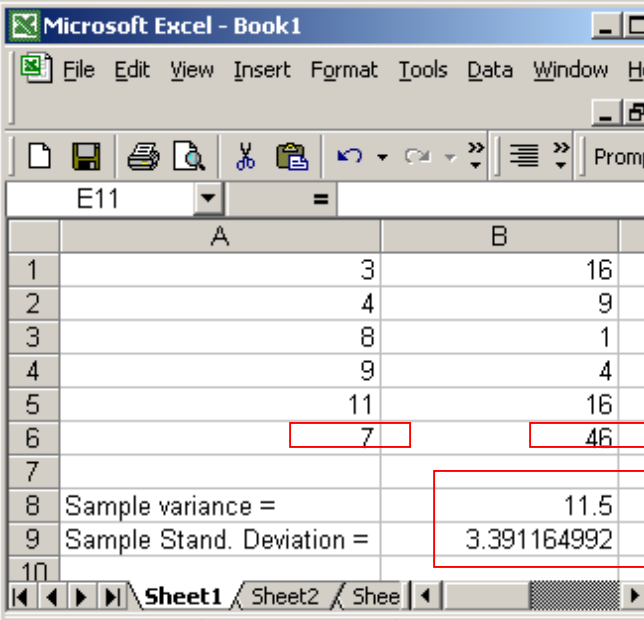


AVERAGE(A1:A5) means the average of the values in A1, A2, A3, A4 and A5.

SUM(B1:B5) means the sum of the values in B1, B2, B3, B4 and B5.

SQRT(B8) means the square root of the value in B8.

Step 3: Type the expressions in cells A6, B6, B8 and B9 as shown in the figure above. The sums, the sample variance and the sample standard deviation will be calculated by Excel and displayed as shown in the picture below.

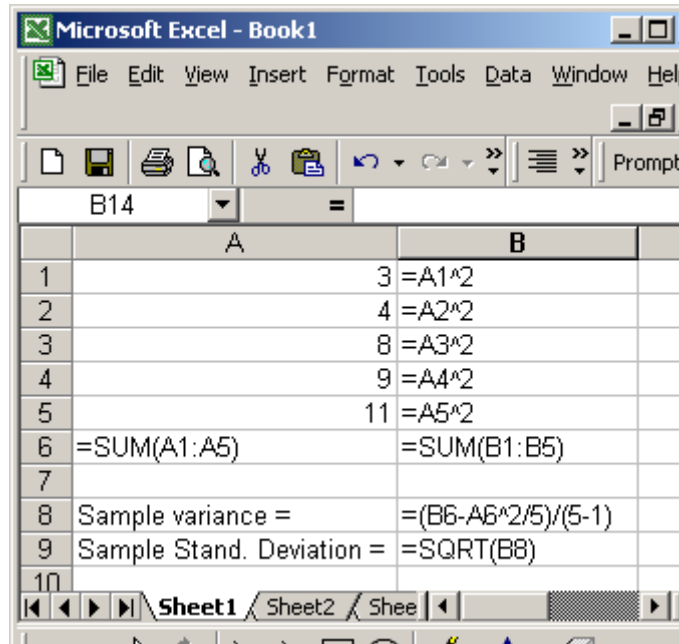


	A	B
1	3	16
2	4	9
3	8	1
4	9	4
5	11	16
6	7	46
7		
8	Sample variance =	11.5
9	Sample Stand. Deviation =	3.391164992

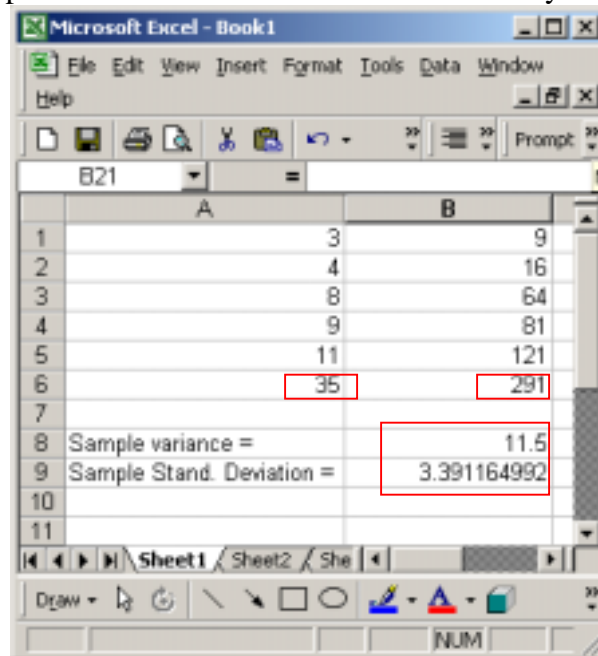
Using Short Cut Formula

Step 1: Enter the data into the Excel spreadsheet as in the following Excel image in column A.

Step 2: In cell B1, enter the square of the number in cell A1 or enter the formula: $=A1^2$ which mean the square of A1. Do the same thing for the rest of the four cells below. The following four cells can be filled by clicking and dragging the mouse down to paste the formula into the four cells.

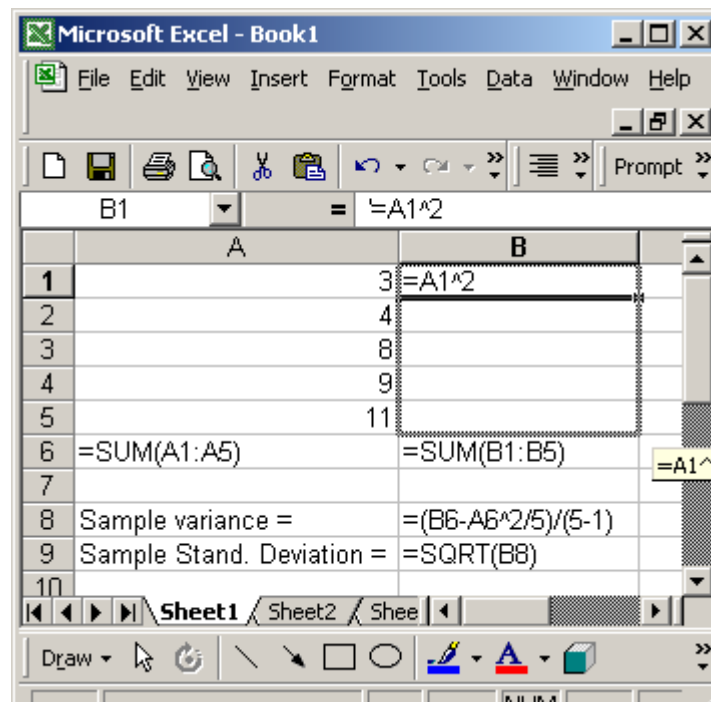
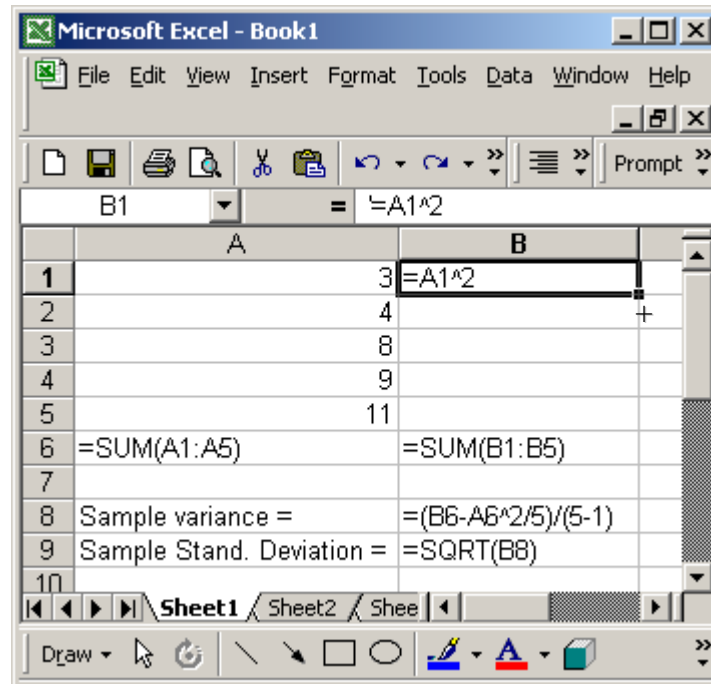


Step 3: Type in the expressions as in A6, B6 and B8. The sums, the sample variance and the sample standard deviation will be calculated by Excel.



To click and drag to fill the formula in the following cells

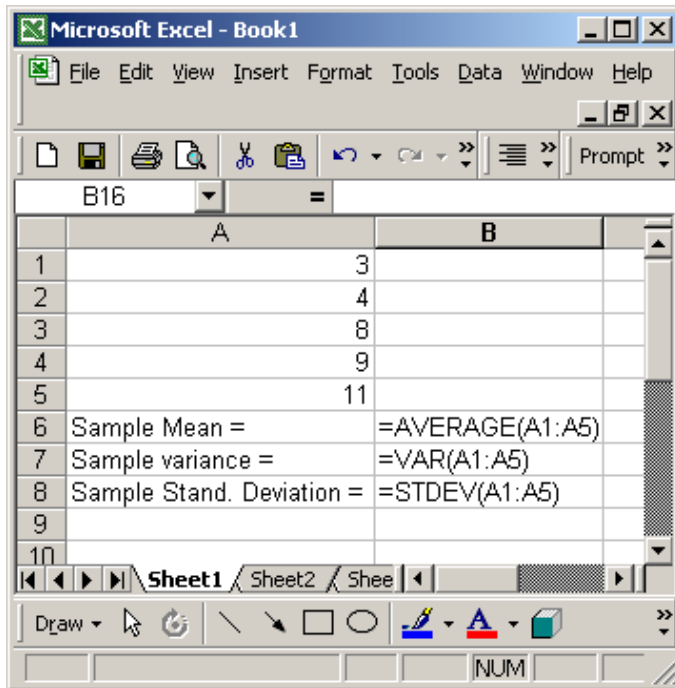
- Step 1: Click the cell that has the formula to be used and move the pointer to the lower right corner of that cell until you see a thin solid cross-sign appear on the corner as shown in the first picture below.
- Step 2: When you see the thin cross-sign, click and hold the mouse button and drag the mouse down through all the cells that need the formula till the last cell, and you should see the black rectangular frame stretched as shown in the second picture below. After you release the mouse button you should see the formula filled in all the cells covered.



Using Excel Functions for Calculating the Sample Variance and Standard Deviation

To calculate some basic statistics: sample mean, sample variance, and sample standard deviation, one can use AVERAGE(.), VAR(.), and STDEV(.) functions to obtain the values. See the following pictures.

Formula:



Result:

