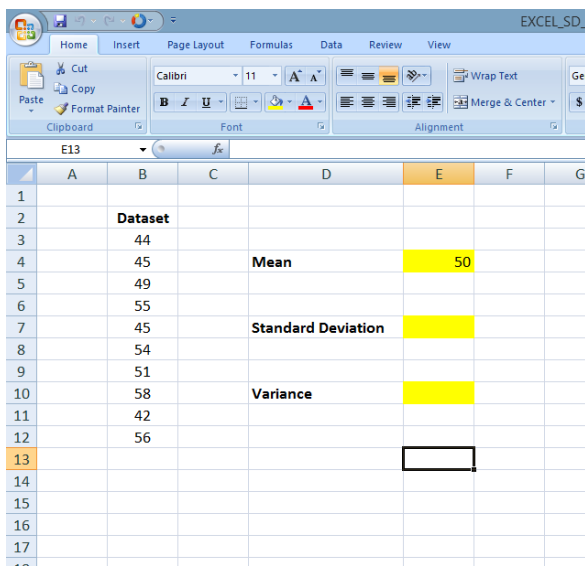


Spreadsheets: Standard Deviation and Variance

In this video, we'll use the functions in Excel to find the standard deviation and variance of a data set. The data set in this case is the numbers in this column here.



The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G
1							
2		Dataset					
3		44					
4		45		Mean	50		
5		49					
6		55					
7		45		Standard Deviation			
8		54					
9		51					
10		58		Variance			
11		42					
12		56					
13							
14							
15							
16							
17							

Spreadsheet programs such as Excel and Zoho Sheets have functions built in that make it easy to calculate standard deviation and variance. Standard deviation and variance are both measures of dispersion. They measure how spread out the data is around its mean. So, we've already calculated the mean, or average of the dataset, to be 50. Remember, we type in an equal sign, average and then select the data set.

	A	B	C	D	E	F	G	H
1								
2		Dataset						
3		44						
4		45	Mean		50			
5		49						
6		55						
7		45	Standard Deviation		=STDEV(B3:B12)			
8		54						
9		51						
10		58	Variance					
11		42						
12		56						
13								
14								
15								
16								

To find the standard deviation, type an equal sign to initiate the start of a formula. Then, type STDEV and an open parenthesis. You'll see the spreadsheet program prompt you with what to enter. In this case, it's asking for number 1, number 2, etc. The spreadsheet program is asking for your dataset. Click and drag your cursor to enclose the whole data set. In some cases, the program will already have the closed parenthesis. But in other cases, you'll have to add it.

Click enter to see the calculation done for you.

	Standard Deviation	5.70477

The standard deviation of this dataset is 5.7, which is relatively low and indicates that the dataset is not very spread out.

The screenshot shows an Excel spreadsheet titled "EXCEL_SD_Variance - M". The ribbon includes Home, Insert, Page Layout, Formulas, Data, Review, and View. The formula bar shows the active cell contains the formula `=VAR(B3:B12)`. The spreadsheet data is as follows:

	A	B	C	D	E	F	G	H
1								
2		Dataset						
3		44						
4		45		Mean	50			
5		49						
6		55						
7		45		Standard Deviation	5.70477			
8		54						
9		51						
10		58		Variance	=VAR(B3:B12)			
11		42						
12		56						
13								
14								

Variance is calculated the same way. A variance of zero would mean that all the values in the dataset are identical. Excel and Zoho Sheets all use “VAR” for the variance formula. Type an equal sign to initiate the formula, then type VAR. Then, again, click and drag to include your whole dataset.

Variance	32.5444	

Then click enter to find that the variance of this dataset is 32.5.