

How to make bar graphs in Excel 2013 (for PC)

The goal of this guide is to create a bar graph of the means of these two samples and add error bars of the standard deviation on either side of the mean.

	A	B	C	D	E	F
1		Sample 1	Sample 2		T test	
2		5	15		p-value	4.69439E-06
3		8	17		t statistic	8.874438355
4		9	19			
5		7	17			
6		6	18			
7		5	13			
8						
9						

First, we need to calculate said means and standard deviations of these samples.

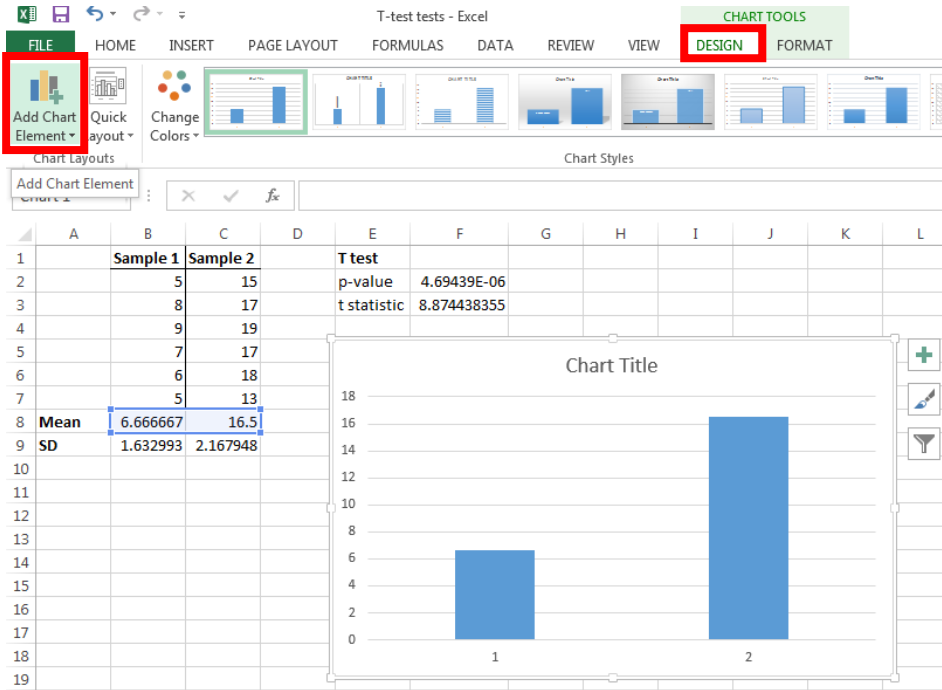
	A	B	C	D	E	F
1		Sample 1	Sample 2		T test	
2		5	15		p-value	4.69439E-06
3		8	17		t statistic	8.874438355
4		9	19			
5		7	17			
6		6	18			
7		5	13			
8	Mean	6.666667	16.5			
9	SD	1.632993	2.167948			

Highlight the calculated means and Insert a 2-D Column chart

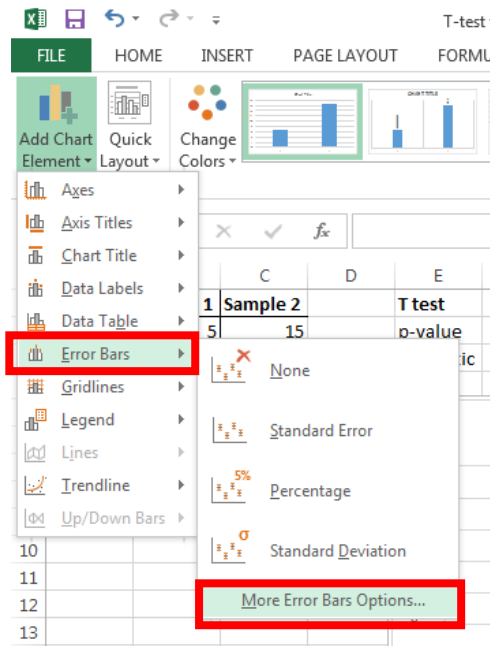
The screenshot shows the Microsoft Excel 2013 interface. The 'INSERT' tab is selected and highlighted with a red box. The 'Recommended Charts' task pane is open on the right side of the window, showing various chart options. The '2-D Column' chart type is selected and highlighted with a red box. The spreadsheet below shows the data from the previous table, with the mean values in cells B8 and C8 highlighted in green. The formula bar at the top shows the formula for the mean in cell B8: `=AVERAGE(B2:B7)`.

	A	B	C	D	E	F	G	H
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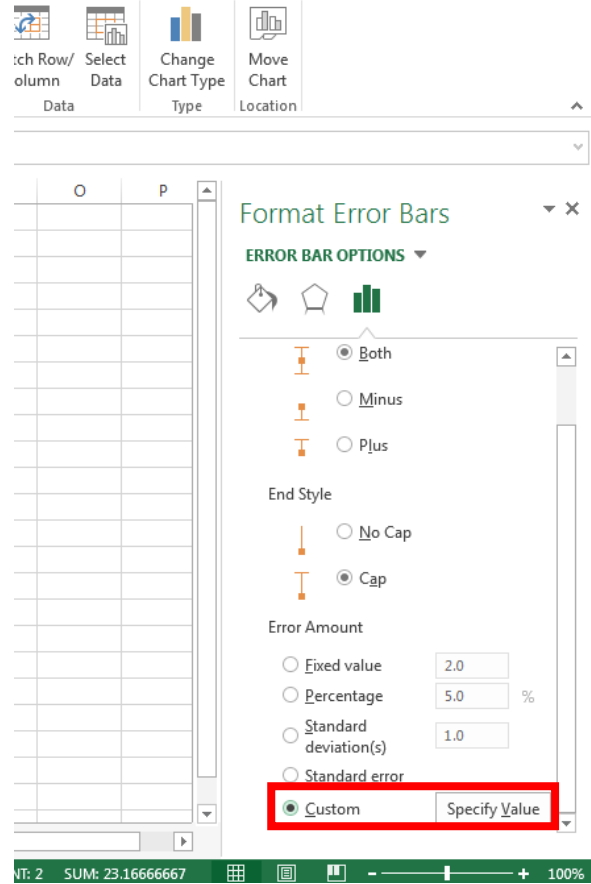
Note: What Excel calls a “bar chart” produces sideways bars. Vertical bars are preferred, so choose “column chart.”



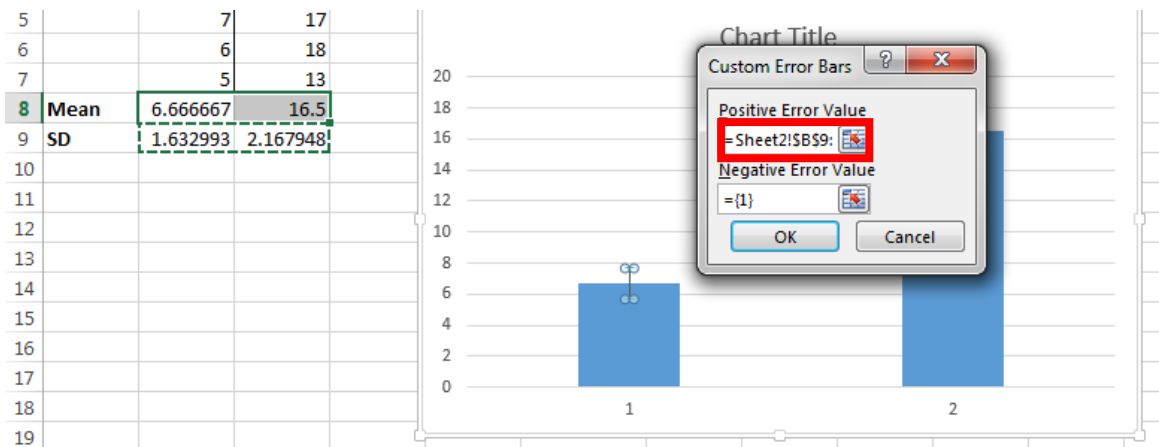
This successfully produces two bars for our two means, and now we have to go to “Add Chart Element” in the upper left hand corner of the Chart Tools – Design ribbon to add error bars. Select “More Error Bars Options...” in the Error Bars menu to ensure you know exactly how they’re calculated.



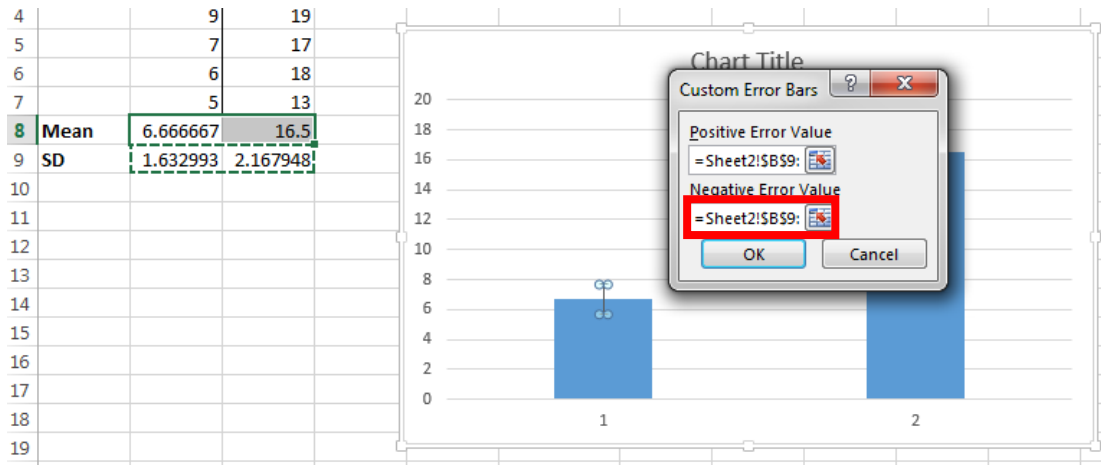
Scroll down in the Error Bar Options side menu to select “Custom” error bars, and then click “Specify Value.”



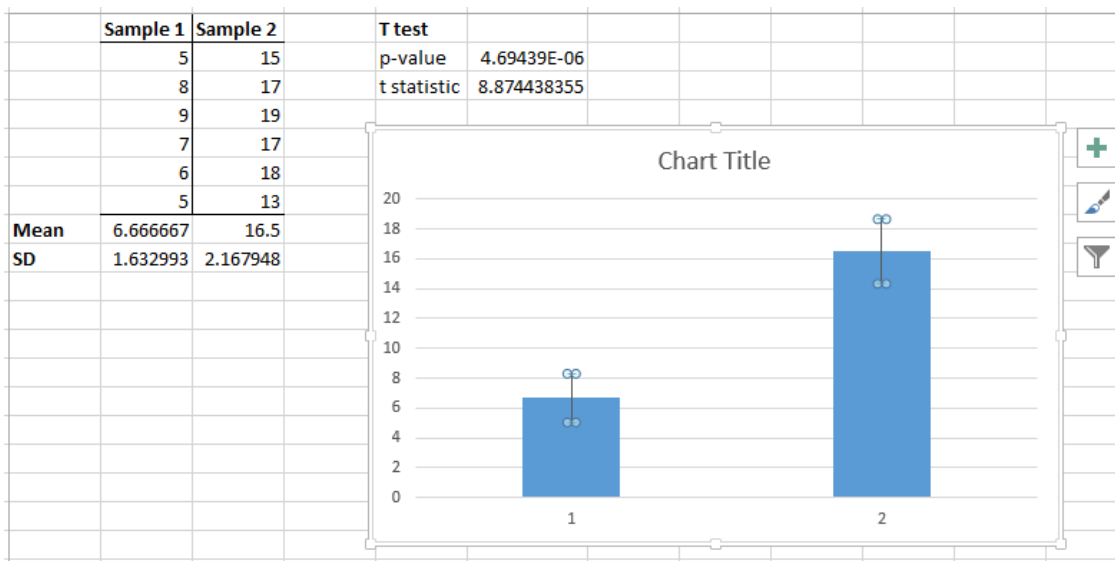
When the window pops up, highlight both standard deviations for the Positive Error Value.



Select the SAME two standard deviation values for the Negative Error Value as well. This ensures that your error bars are symmetrical on either side of the average.



Click OK and check the error bars by eye.



There you are! Each graph still requires a title, a y-axis label with units, and an x-axis label describing the difference between the sample treatments. If you have any questions about how to complete those tasks, please see the first Graphing in Excel 2010 Guide posted on Blackboard. If that doesn't clear things up, send me an email!