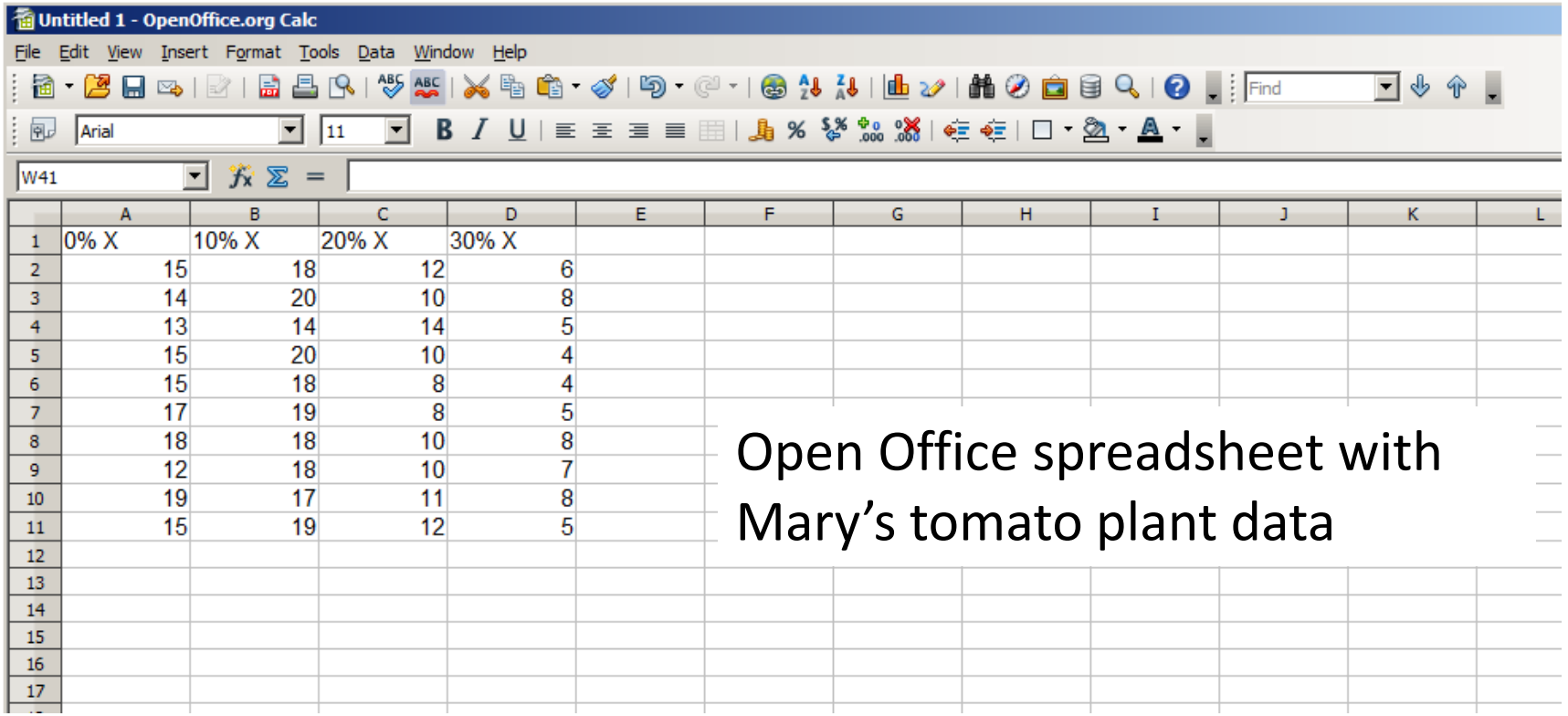
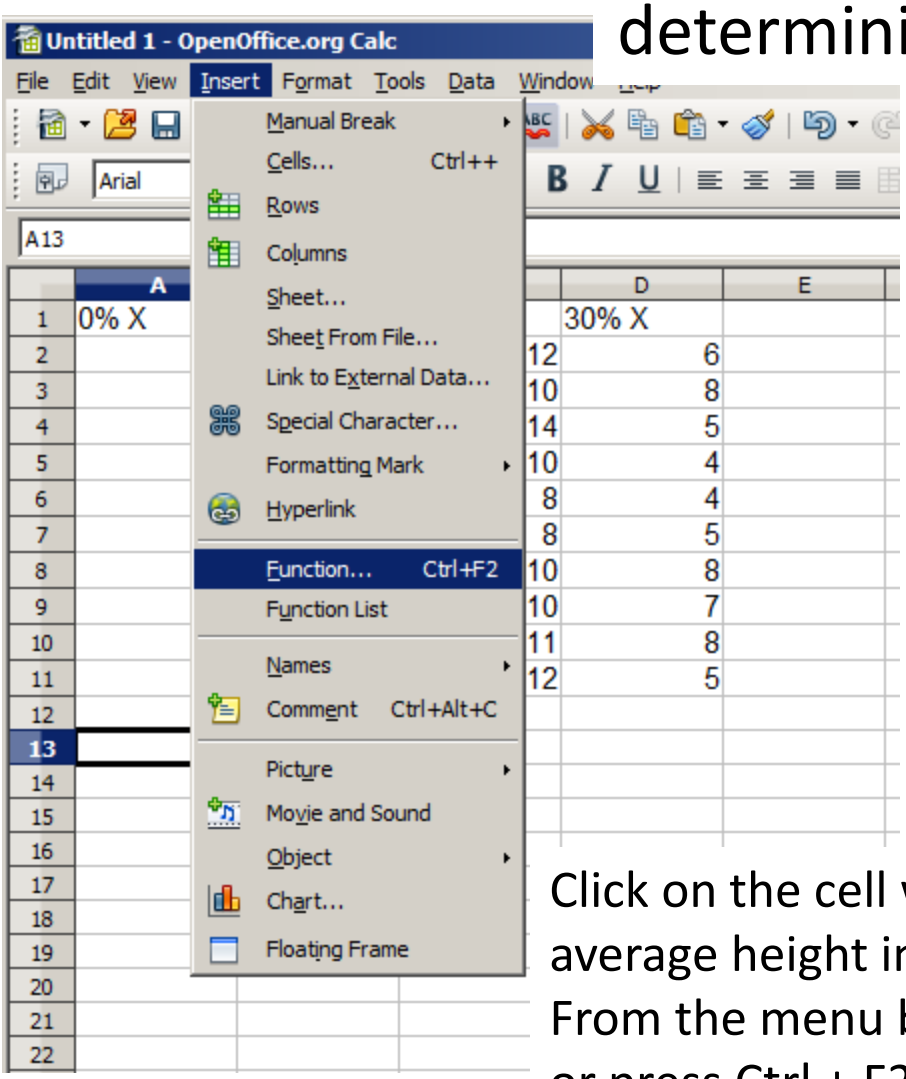


	A	B	C	D	E	F	G	H	I	J	K	L
1	0% X	10% X	20% X	30% X								
2	15	18	12	6								
3	14	20	10	8								
4	13	14	14	5								
5	15	20	10	4								
6	15	18	8	4								
7	17	19	8	5								
8	18	18	10	8								
9	12	18	10	7								
10	19	17	11	8								
11	15	19	12	5								
12												
13												
14												
15												
16												
17												

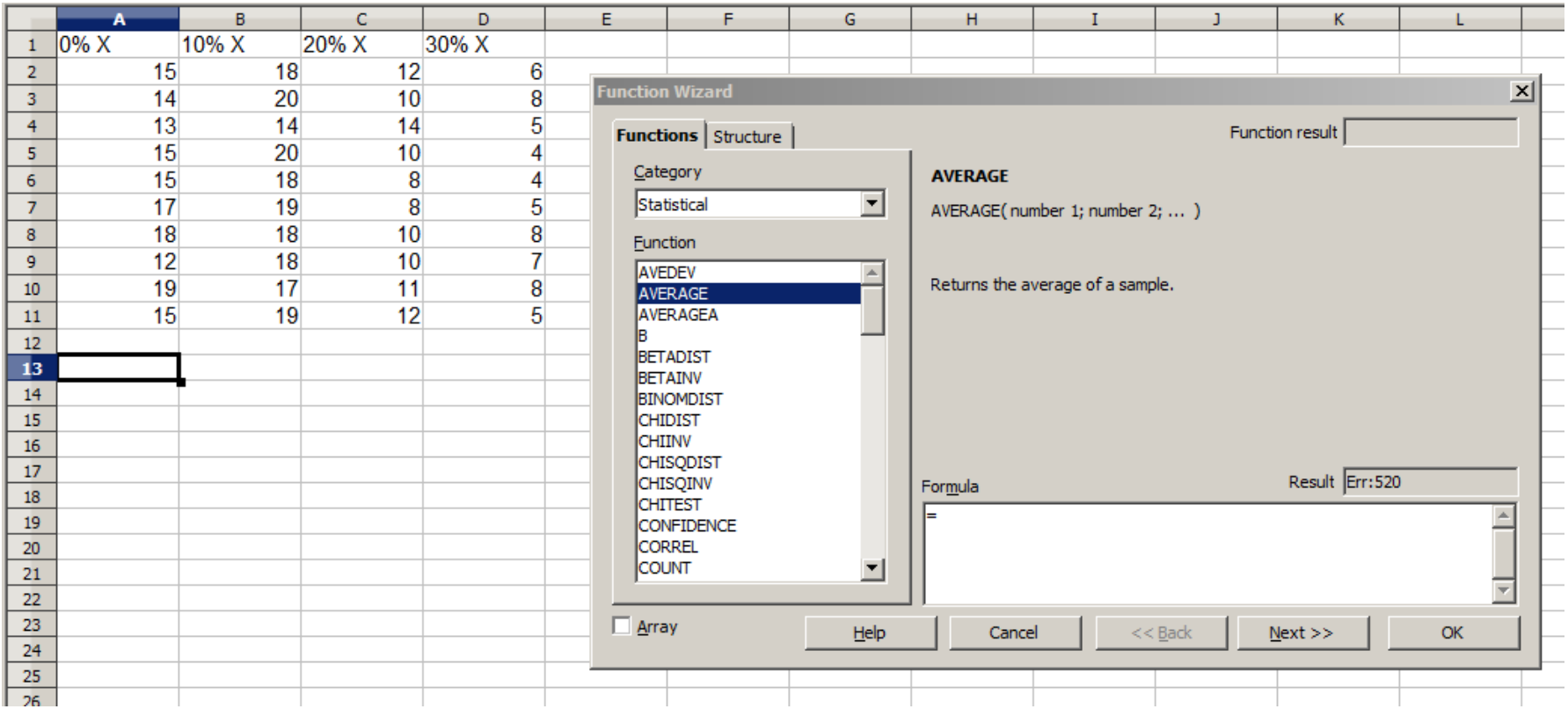
Open Office spreadsheet with Mary's tomato plant data

determining mean in Open Office



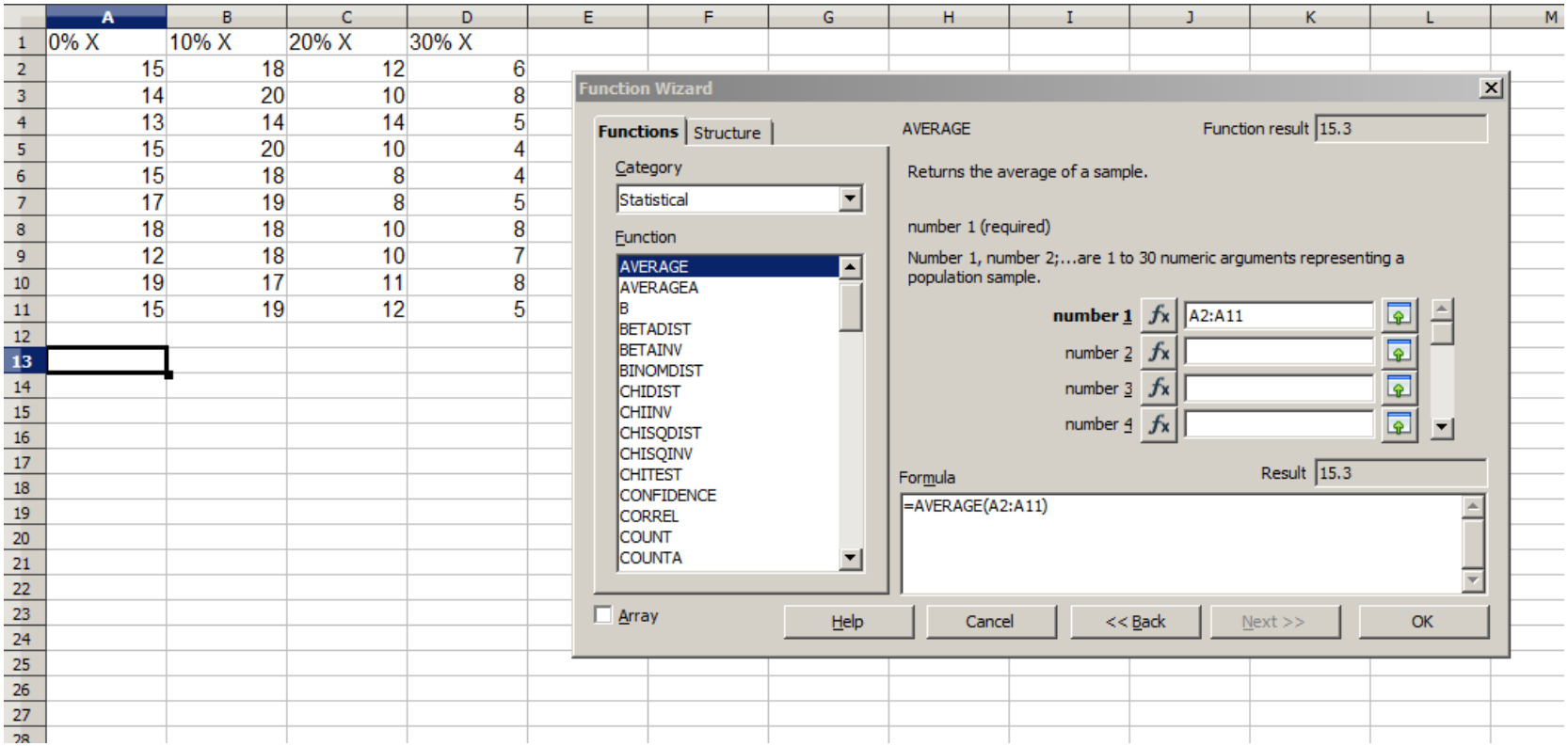
Click on the cell where you want to put the average height in the 0% X group.

From the menu bar, select Insert --> Function or press Ctrl + F2.

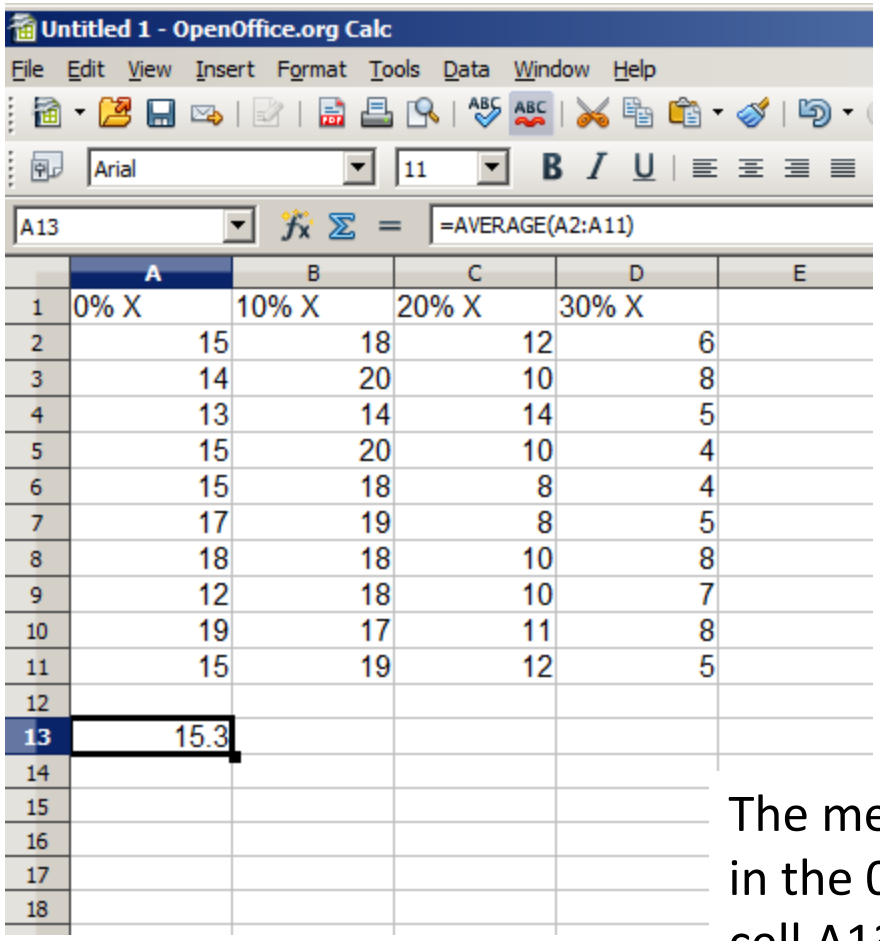


You'll get a dialog box. Select Statistical from the pull down menu for Category. Then select AVERAGE from the Function list.

Click Next>>



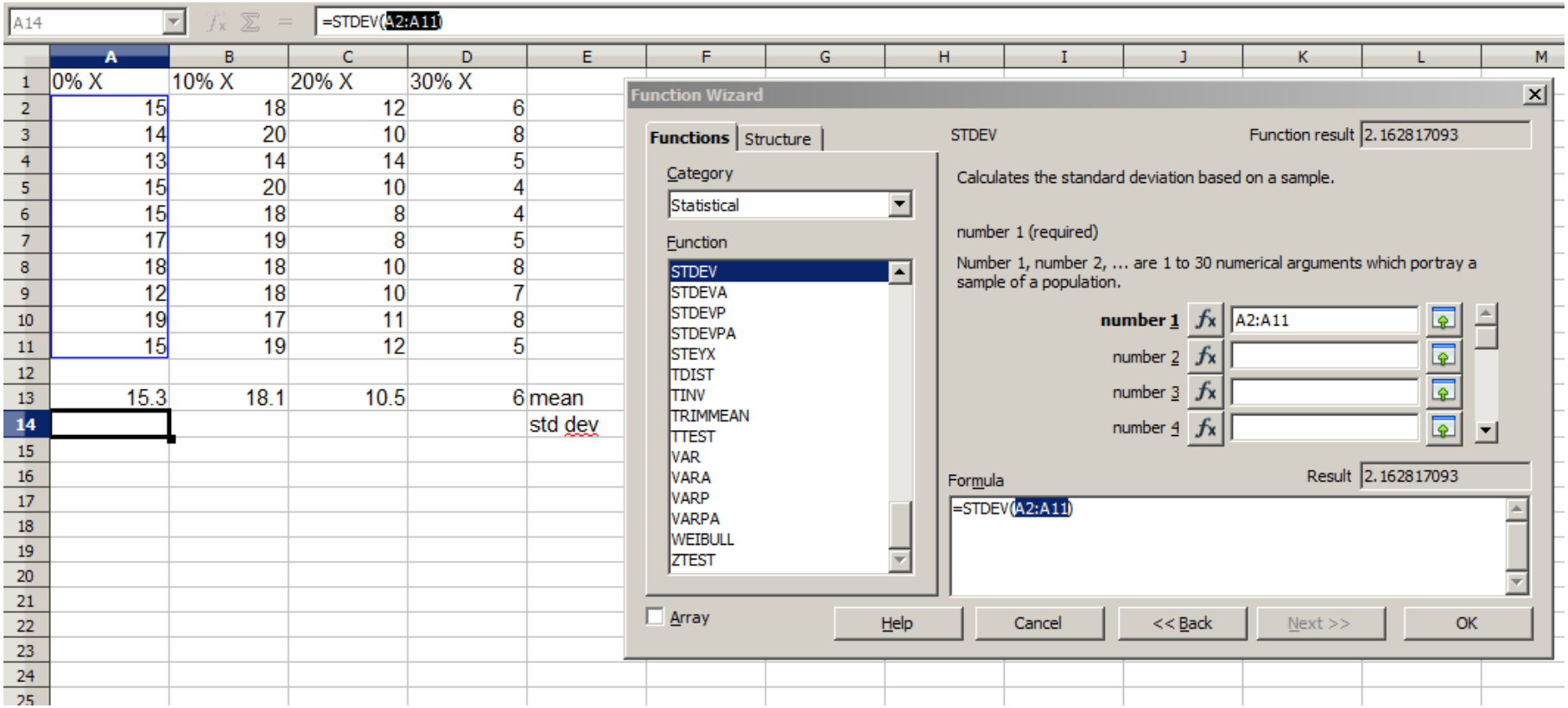
Enter the range of cells to be averaged in the number 1 box. You can either type the cell numbers in the box or highlight the column of cells. Click OK.



	A	B	C	D	E
1	0% X	10% X	20% X	30% X	
2	15	18	12	6	
3	14	20	10	8	
4	13	14	14	5	
5	15	20	10	4	
6	15	18	8	4	
7	17	19	8	5	
8	18	18	10	8	
9	12	18	10	7	
10	19	17	11	8	
11	15	19	12	5	
12					
13	15.3				
14					
15					
16					
17					
18					

The mean plant height for the plants in the 0% X group now appears in cell A13. Repeat the steps to get the means for the 10%, 20%, and 30% groups.

Standard Deviation

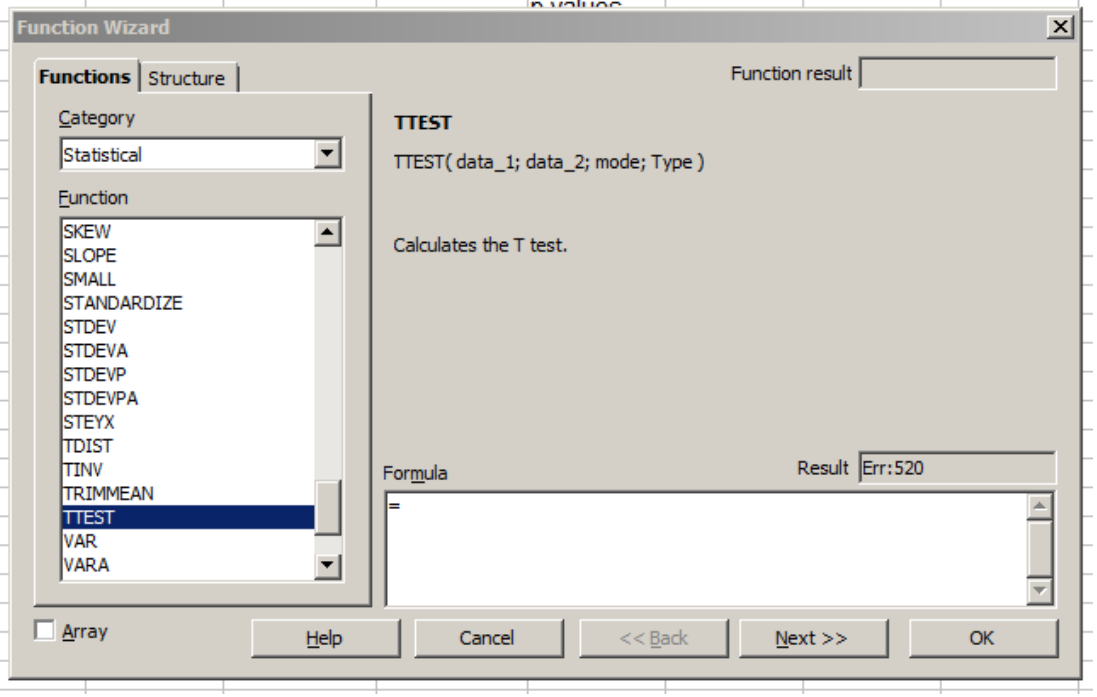


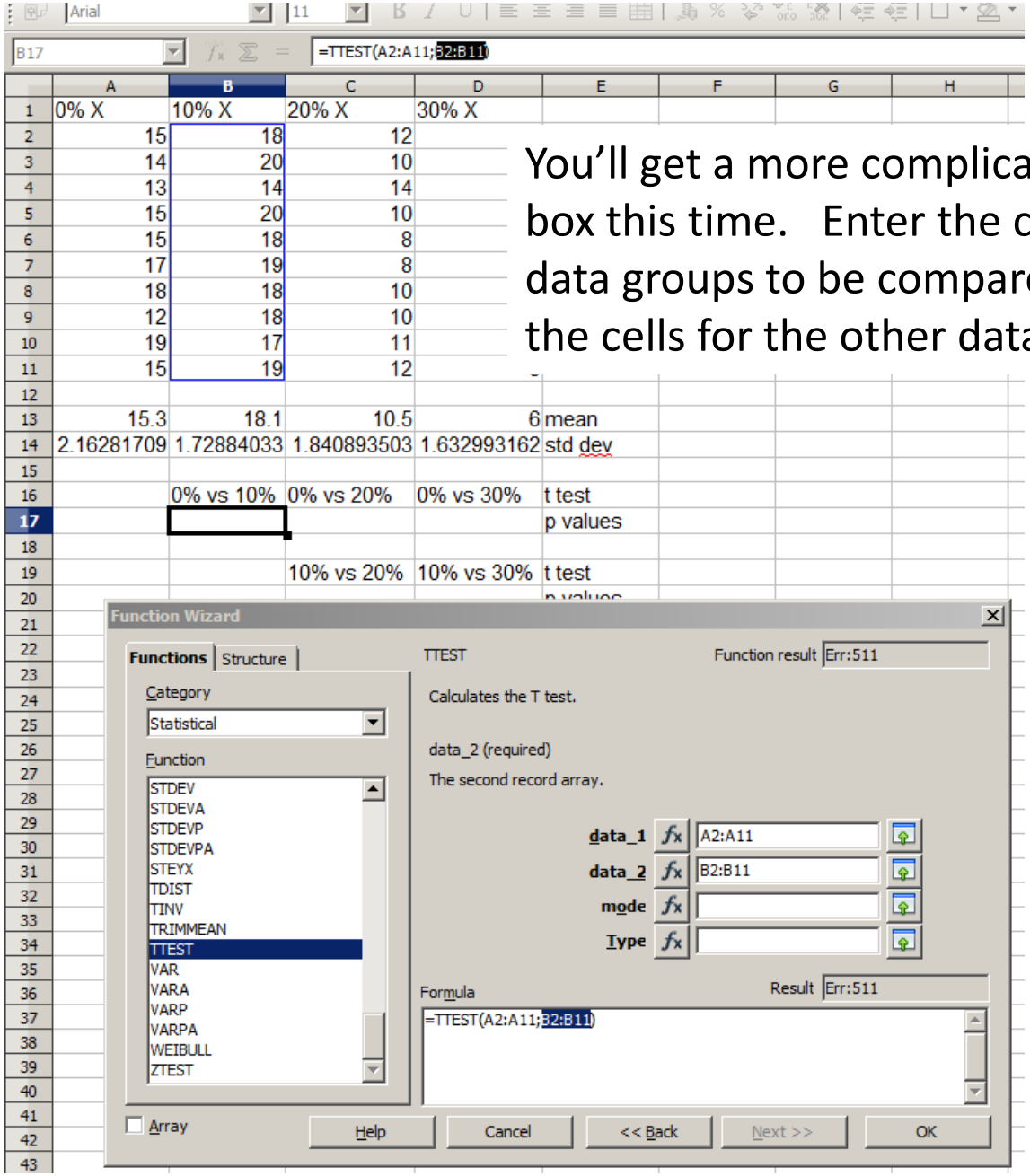
The steps for determining the standard deviation for each group are essentially the same as for determining the mean. The exception is that you select STDEV from the Function list.

	A	B	C	D	E
1	0% X	10% X	20% X	30% X	
2	15	18	12	6	
3	14	20	10	8	
4	13	14	14	5	
5	15	20	10	4	
6	15	18	8	4	
7	17	19	8	5	
8	18	18	10	8	
9	12	18	10	7	
10	19	17	11	8	
11	15	19	12	5	
12					
13	15.3	18.1	10.5	6	mean
14	2.16281709	1.72884033	1.840893503	1.632993162	std dev
15					
16		0% vs 10%	0% vs 20%	0% vs 30%	t test
17					p values
18					
19			10% vs 20%	10% vs 30%	t test
20					p values

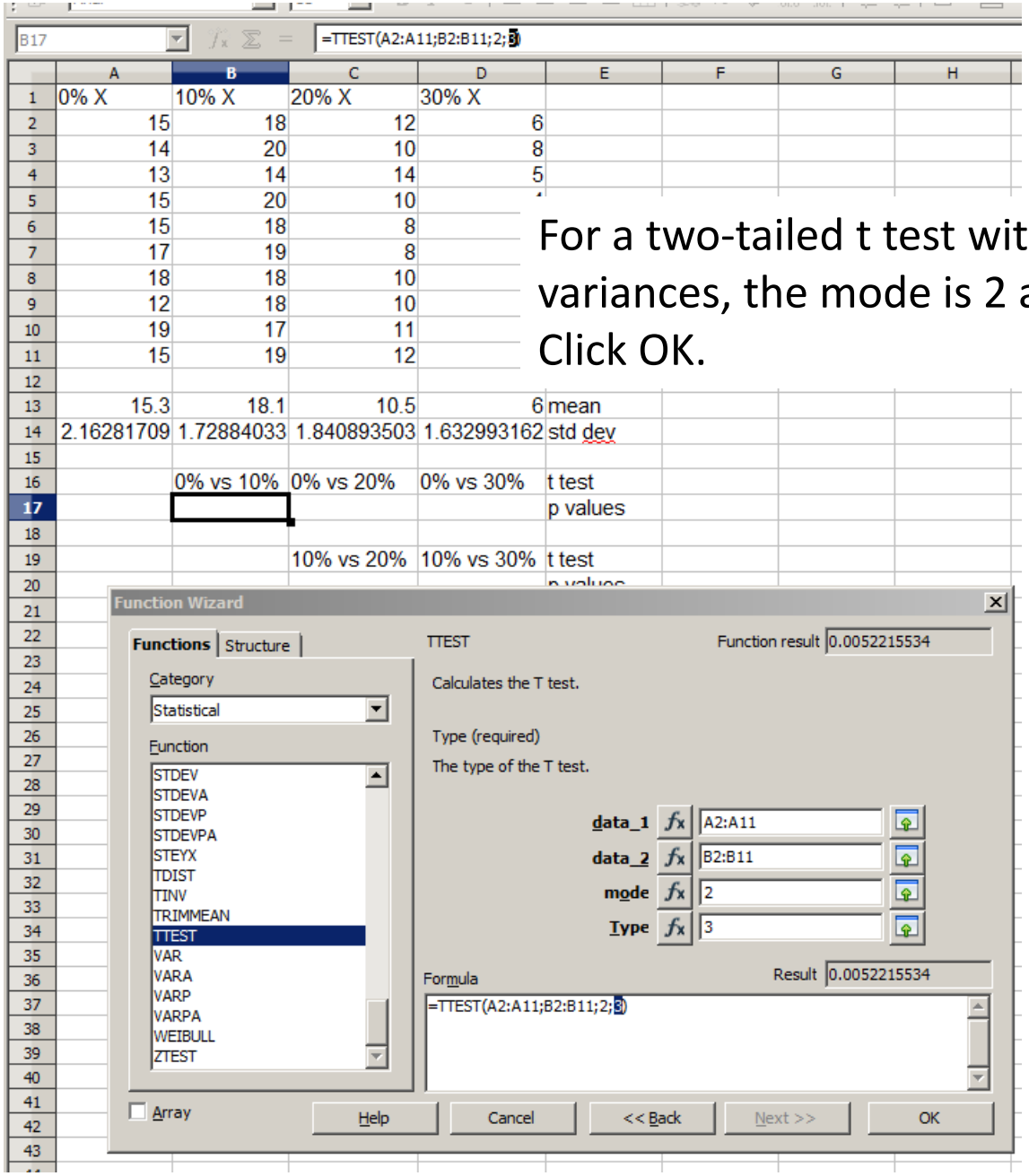
t test

For the t test to compare two means, select TTEST from the Function list. Click Next>>.

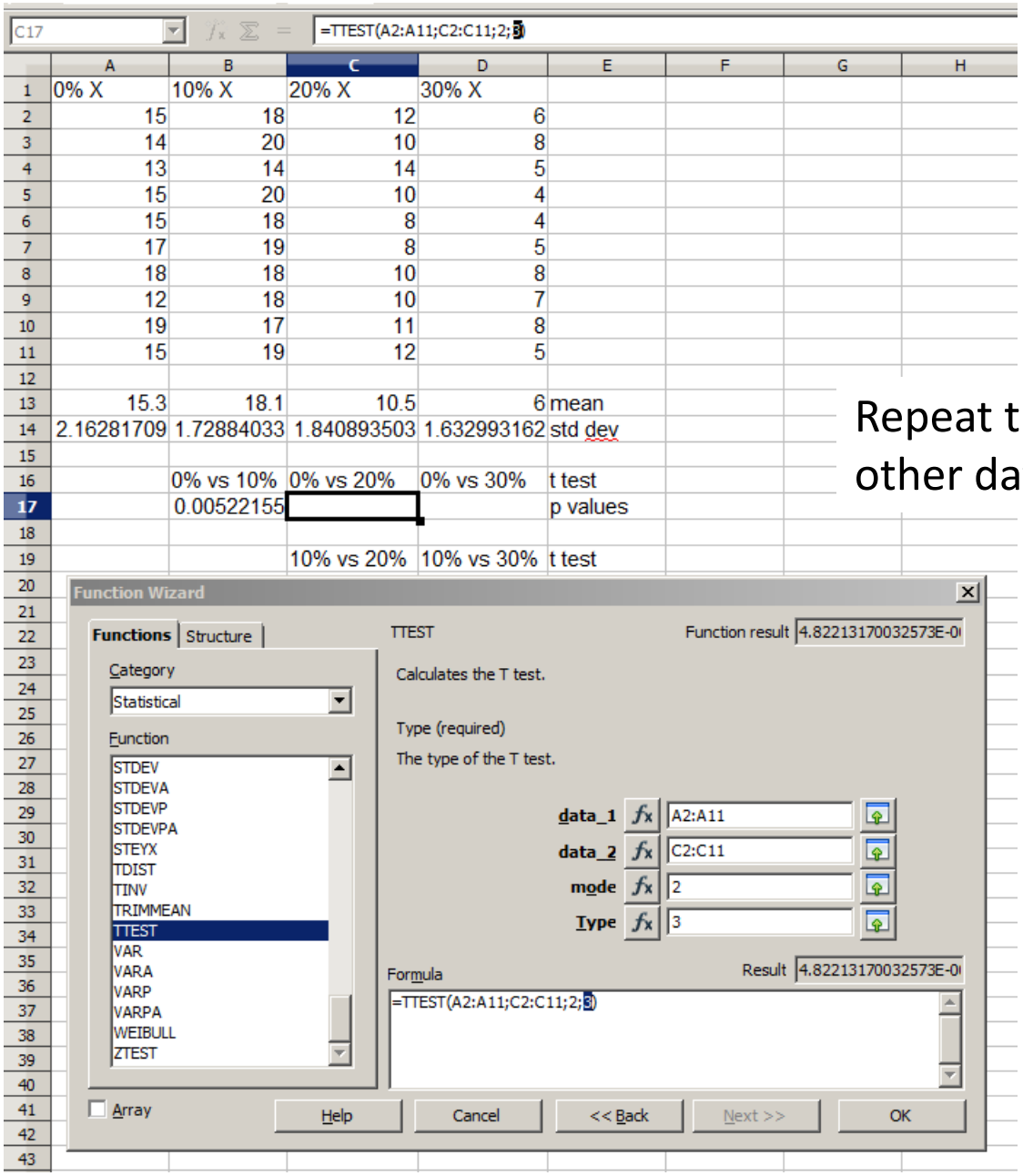




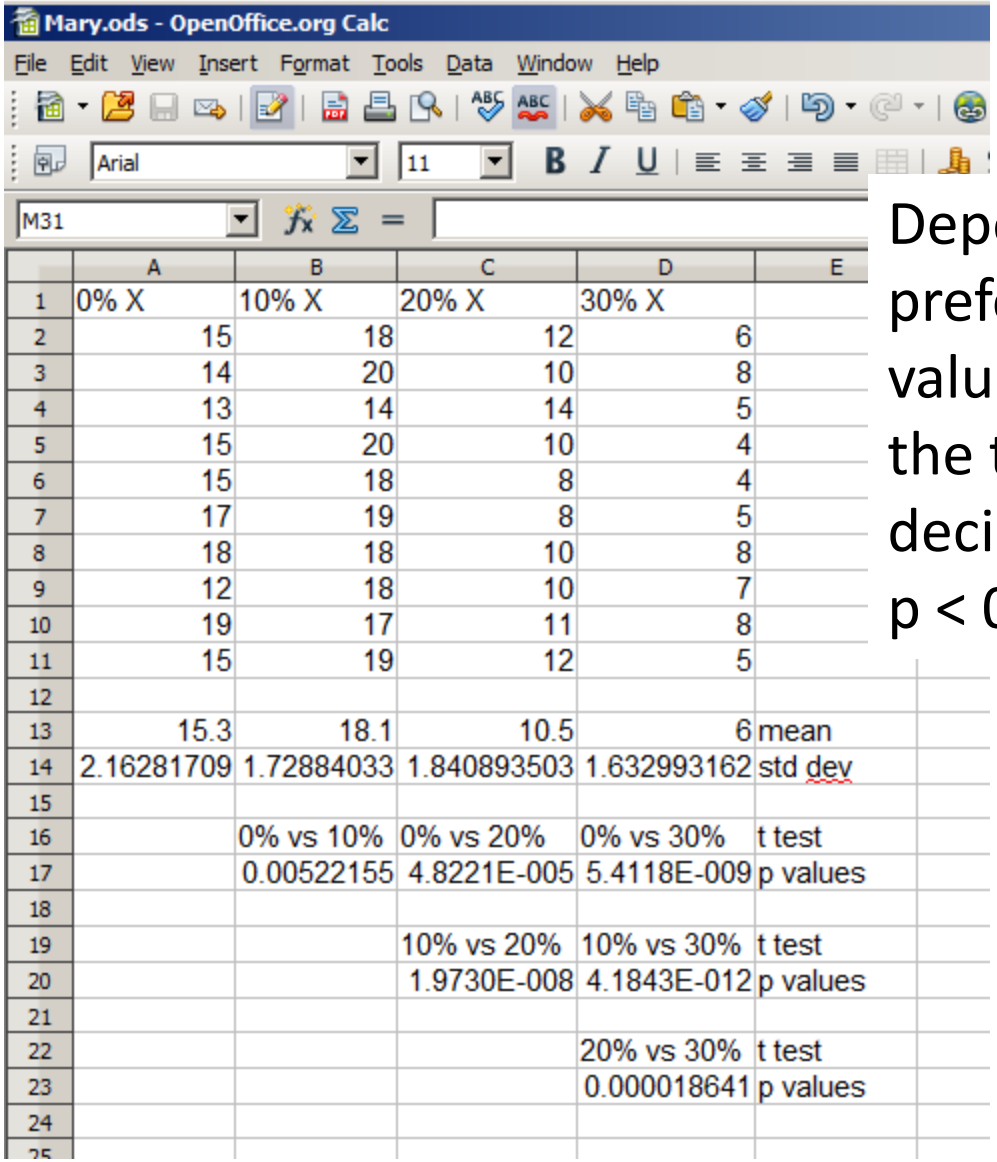
You'll get a more complicated looking dialog box this time. Enter the cells for one of the data groups to be compared in data_1. Enter the cells for the other data group in data_2.



For a two-tailed t test with unequal variances, the mode is 2 and the Type is 3. Click OK.



Repeat the t test for the other data pairs.



	A	B	C	D	E
1	0% X	10% X	20% X	30% X	
2	15	18	12	6	
3	14	20	10	8	
4	13	14	14	5	
5	15	20	10	4	
6	15	18	8	4	
7	17	19	8	5	
8	18	18	10	8	
9	12	18	10	7	
10	19	17	11	8	
11	15	19	12	5	
12					
13	15.3	18.1	10.5	6	mean
14	2.16281709	1.72884033	1.840893503	1.632993162	std dev
15					
16		0% vs 10%	0% vs 20%	0% vs 30%	t test
17		0.00522155	4.8221E-005	5.4118E-009	p values
18					
19			10% vs 20%	10% vs 30%	t test
20			1.9730E-008	4.1843E-012	p values
21					
22				20% vs 30%	t test
23				0.000018641	p values
24					

Depending on how the preferences are set up, the p values that are reported for the t test might only go to two decimal places. In that case, $p < 0.01$ will appear as zero.