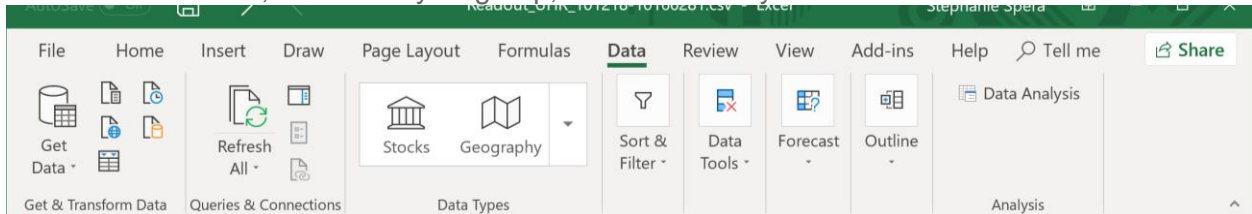


EXCEL TIPS

The very first excel tip is that **GOOGLE** has all the answers.

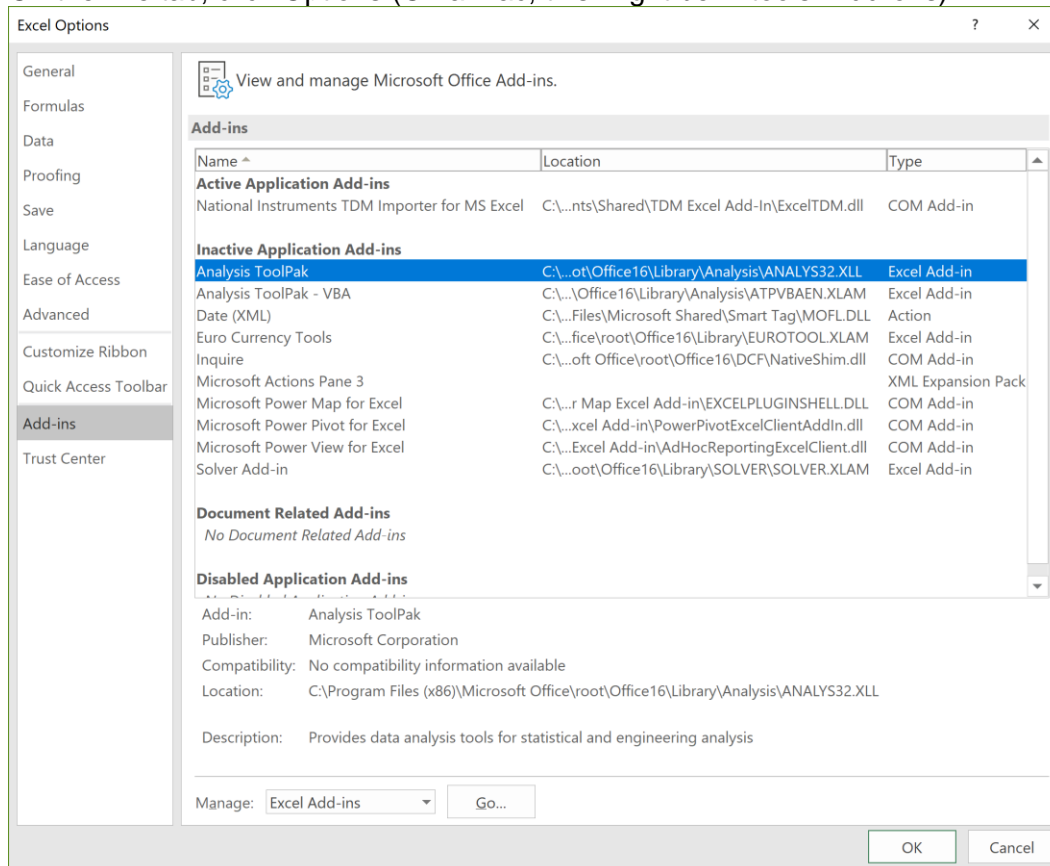
Performing a T-Test in Excel.

1. On the Data tab, in the Analysis group, click Data Analysis.



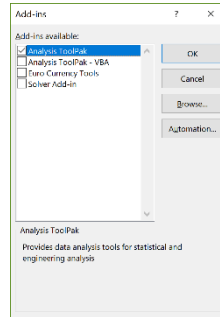
If this tab doesn't exist in your Excel, then you might have to just turn it on. To do so:

a. On the File tab, click Options. (On a Mac, this might be in tools>Add-ons)



b. Click "Go..."

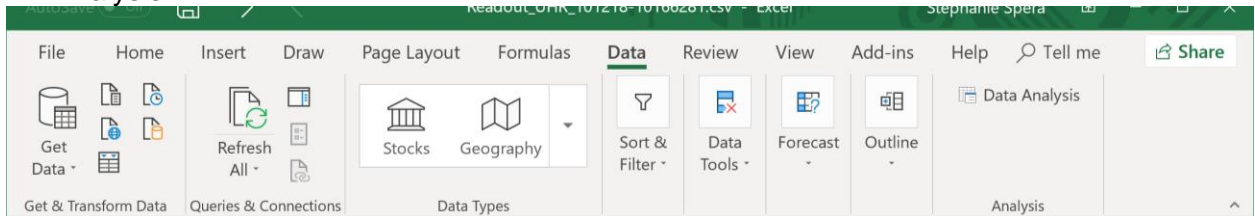
c. Check Analysis ToolPak and



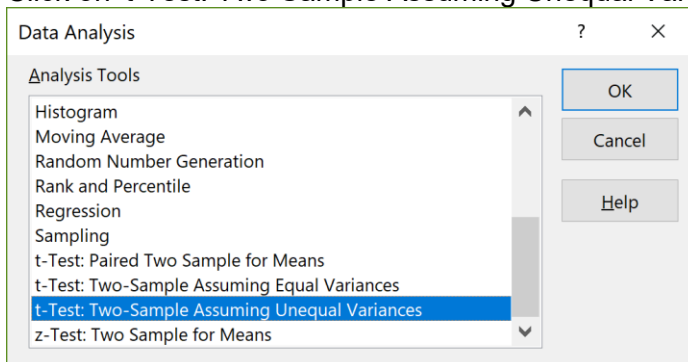
click OK

d. On the Data tab, in the Analysis Analysis!

group, you can now click on Data



2. Click on 't-Test: Two Sample Assuming Unequal Variances'



3. Click in the Variable 1 Range box and select the range of data associated with your first variable. (Pasture?)
4. Click in the Variable 2 Range box and select the range of data associated with your second variable. (Forest?)
5. Make sure the alpha is set to 0.05
6. You can keep the "New Worksheet Ply" selected in Output options, this will output the results in a new datasheet that you can rename.
7. Click OK
8. Your result will look something like:

	A	B	C
1	t-Test: Two-Sample Assuming Unequal Variances		
2			
3		<i>Variable 1</i>	<i>Variable 2</i>
4	Mean	87.88601	97.30627
5	Variance	107.1032	85.23838
6	Observations	186	186
7	Hypothesized Mean Difference	0	
8	df	365	
9	t Stat	-9.26367	
10	P(T<=t) one-tail	8.68E-19	
11	t Critical one-tail	1.649039	
12	P(T<=t) two-tail	1.74E-18	
13	t Critical two-tail	1.966485	
14			

- To reject the null hypothesis (that there is no difference between the temperature means at each site):

[t Stat] < [- t Critical one/two-tail] (depending on which you choose)

OR

[t Stat] > [+ t Critical one/two- tail]

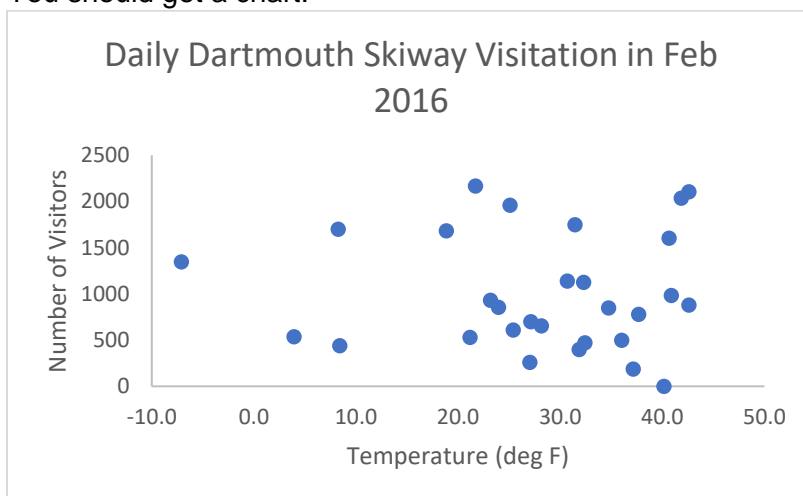
In this case, if I'm interested in the two-tailed result:

-9.263 < -1.966, so we can reject the null hypothesis, and conclude that means of these two datasets are significantly different. (OR if your $P < 0.5$)

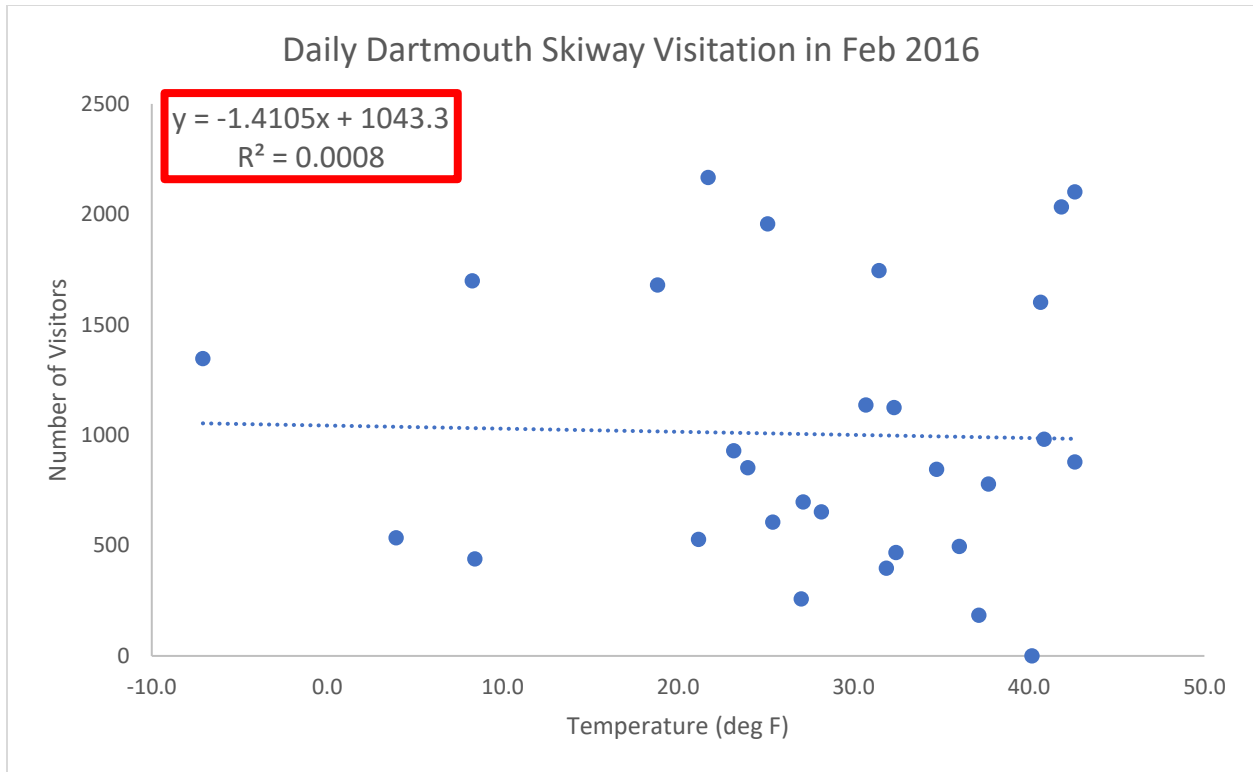
To Create an X-Y Scatterplot with a Trendline and R2

- Go to Insert>Chart>Scatter (with just the dots). A blank chart should appear in your worksheet.
- Right click on the chart>Select Data

- Choose your x values, by clicking the Select Range button, and highlighting the range, and then select the y series values
- You should get a chart:



- But, we want to add a trendline, and R2 value, so we rightclick on a datapoint, and click, 'Add trendline'
- The format trendline box should appear:
- Check off 'Display equation on chart' and 'Display R2 value on chart'



How to Average Over Specific Months with the AVERAGEIF function

The general formula for this function is:

=AVERAGEIF(range, "criteria", [average_range])

So, let's say the dataset below was my dataset, and I wanted to determine the average number of adult ticks in June across all years.

=(AVERAGEIF(J:J,"=7",K:K))

	F	G	H	I	J	K	L	M	N
	decimalLongitude	geodeticElevation	collectDateYear	collectDateMonth	adultCount			0.722892	
6	-78.1619	WGS84	263.6	2014	6	1			
8	-78.1503	WGS84	277.1	2014	6	0			
4	-78.1633	WGS84	361.3	2014	6	1			
1	-78.1294	WGS84	428.3	2014	6	3			
6	-78.1427	WGS84	327.7	2014	6	2			

My data which has which months of collection is in column J. To select a whole column: J:J

My adult tick data is in column K. And the month of June is the 6th month of the year.

My formula then is (AVERAGEIF(J:J, "=6", K:K)).

