The Data Journalist
Chapter 4 tutorial
Doing Cool Stuff with Paste Special

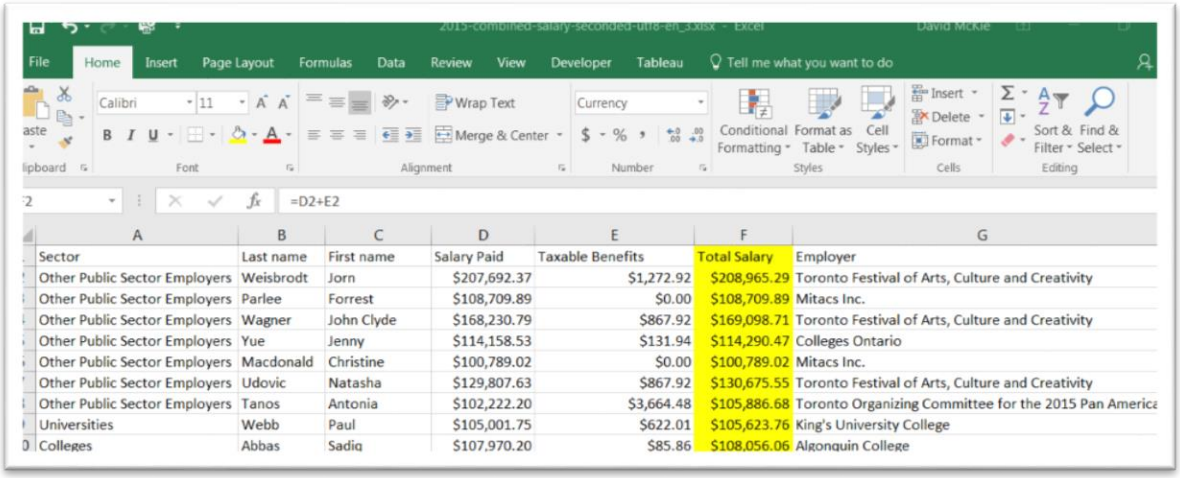
Summary: Paste special is like the paste command, but with some extra twists. This tutorial will show you how to use paste special in Microsoft Excel for the following common tasks. The functionality in OpenOffice is basically identical, so you should be able to follow these directions.

What you will learn:

1. Replacing a column or row of formulas with the values that the formulas produce.
2. Copying a pivot table to a new worksheet as a plain table.
3. Transposing the rows and columns of a worksheet.
4. Multiplying or dividing a range of values by another value.

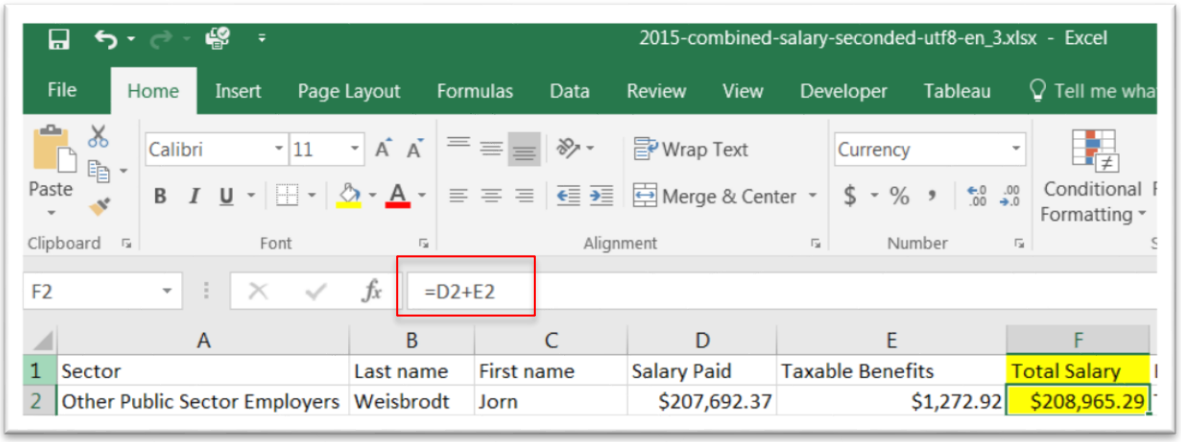
Task 1: Replacing a column or row of formulas with the values that the formulas produce.

Downloadable data: You can download the sample data for this task 2015-combined-salary-seconded-utf8-en_3.xlsx. It contains the salaries of Ontario public servants who make more than $100,000 a year. It is also the dataset that we'll be using for our live exercise based on a published story.



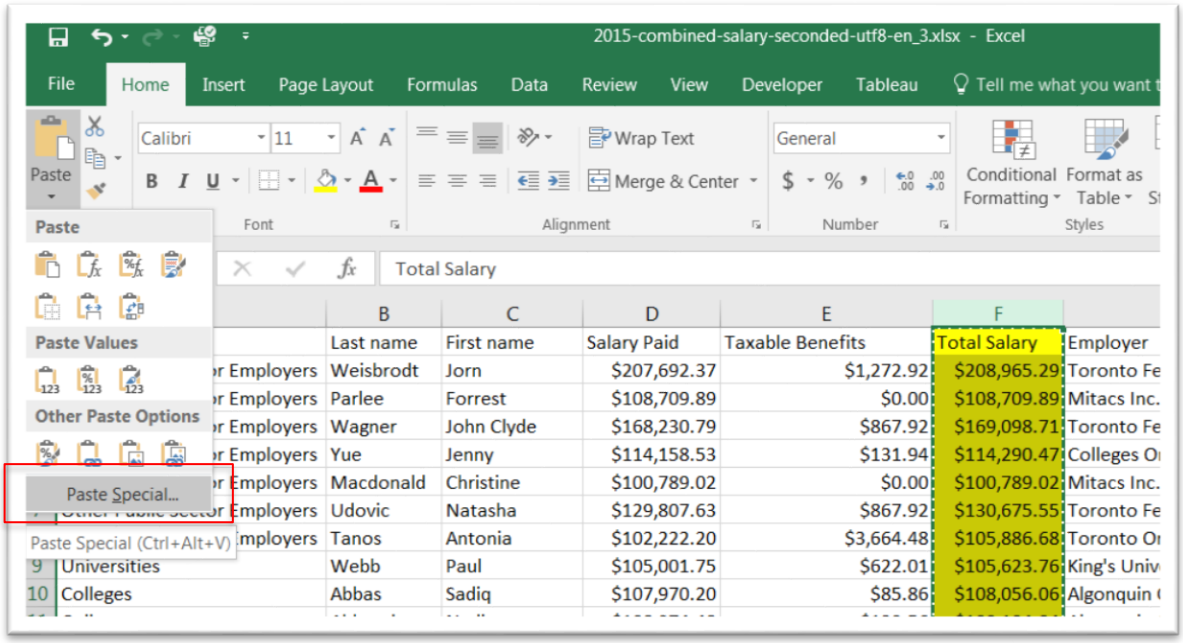
	A	B	C	D	E	F	G
	Sector	Last name	First name	Salary Paid	Taxable Benefits	Total Salary	Employer
	Other Public Sector Employers	Weisbrodt	Jorn	$207,692.37	$1,272.92	$208,965.29	Toronto Festival of Arts, Culture and Creativity
	Other Public Sector Employers	Parlee	Forrest	$108,709.89	$0.00	$108,709.89	Mitacs Inc.
	Other Public Sector Employers	Wagner	John Clyde	$168,230.79	$867.92	$169,098.71	Toronto Festival of Arts, Culture and Creativity
	Other Public Sector Employers	Yue	Jenny	$114,158.53	$131.94	$114,290.47	Colleges Ontario
	Other Public Sector Employers	Macdonald	Christine	$100,789.02	$0.00	$100,789.02	Mitacs Inc.
	Other Public Sector Employers	Udovic	Natasha	$129,807.63	$867.92	$130,675.55	Toronto Festival of Arts, Culture and Creativity
	Other Public Sector Employers	Tanos	Antonia	$102,222.20	$3,664.48	$105,886.68	Toronto Organizing Committee for the 2015 Pan Americ
	Universities	Webb	Paul	$105,001.75	$622.01	$105,623.76	King's University College
0	Colleges	Abbas	Sadiq	$107,970.20	$85.86	$108,056.06	Algonquin College

In column F, we have added the values in columns D and E to obtain a total salary. By clicking on the first value in the column, we can see the formula in the formula bar.
Let's say that we only wanted to preserve the values and get rid of the formula that created them. If you want to switch it to the underlying values calculated by the formula, it's really easy.
First, highlight the column of formulas.

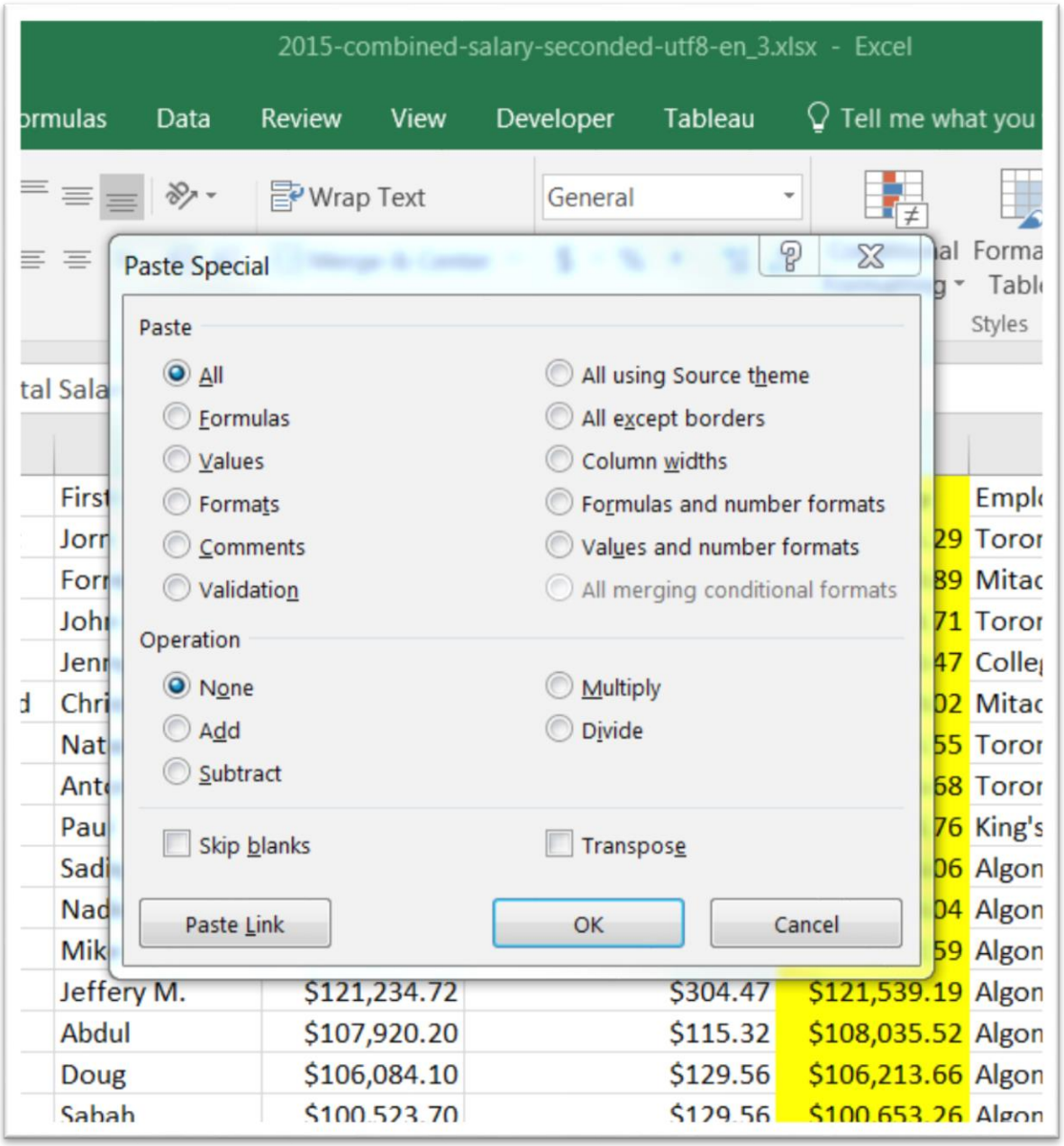


Next, copy the highlighted column to the clipboard by using the keyboard shortcut <CTRL> C on a Windows PC or <CMD> C on a Mac, or by right clicking on the column (<CTRL> left click on a Mac) and choosing Copy from the popup menu.

Once you have copied the column to the clipboard, choose Paste Special from the "paste" dropdown menu on the home ribbon of Excel. A dialogue box should open, like this one:

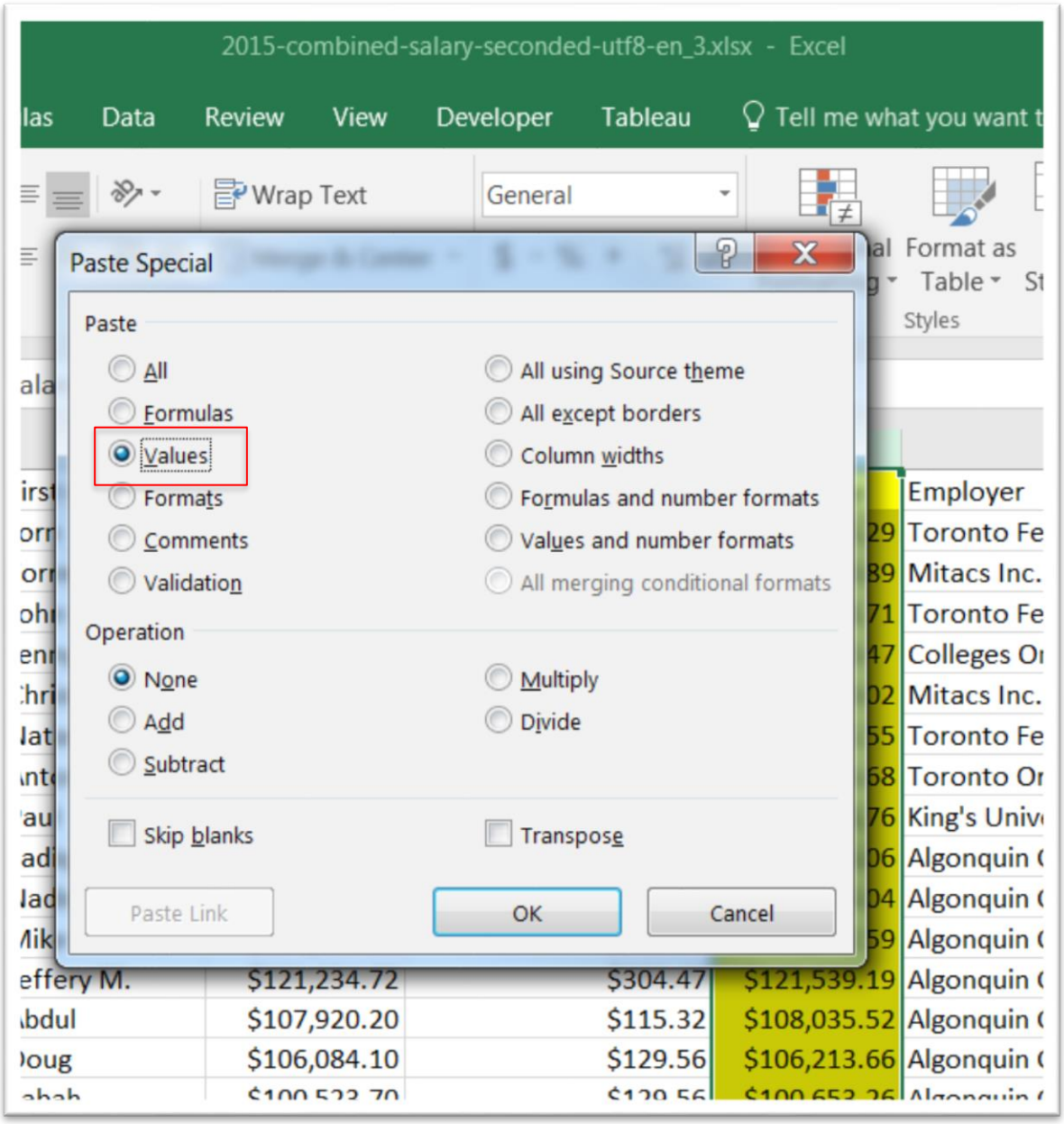


You can also right click on highlighted the column and choose Paste Special from the popup menu.



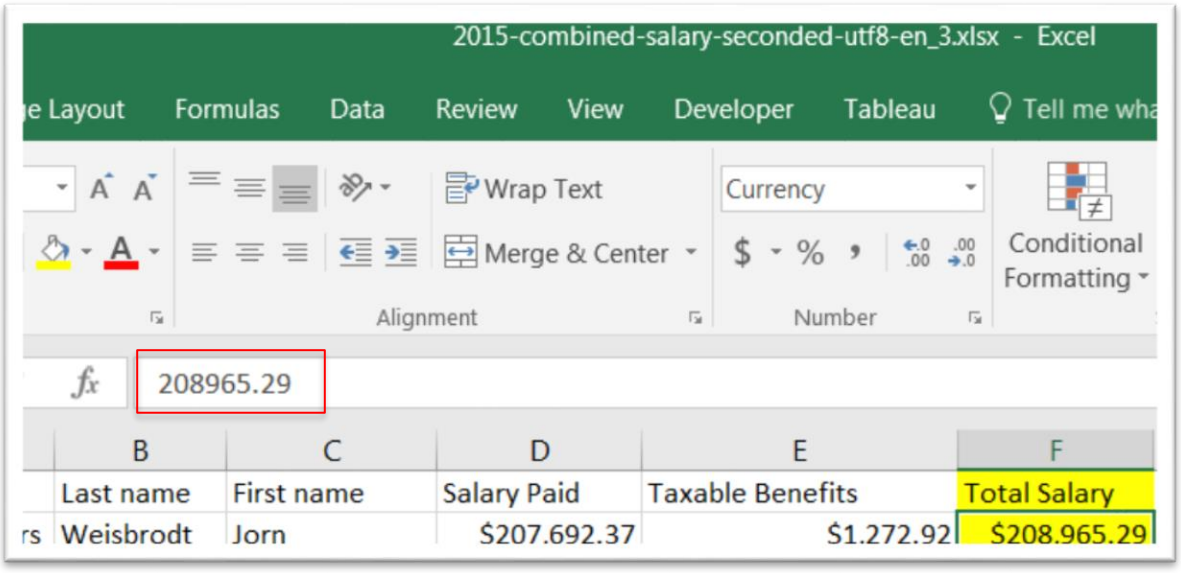
In the dialogue, in the Paste area, choose the “Values” radio button. If you wish to retain the number formatting, if you formatted your column or row as percentages or some other number format such as currency, choose the

"Values and number formats" radio button. Then, click OK.



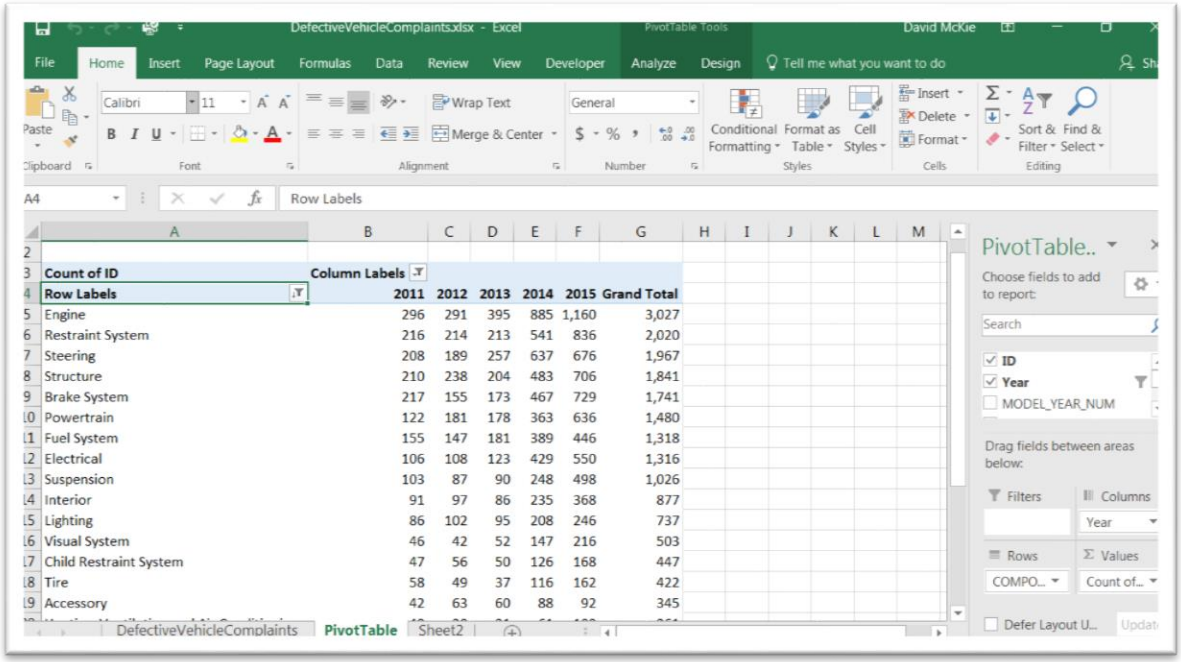
Your formulas have now been replaced by as the underlying values. So when you once again click on F2, you'll see the value in the formula bar,

and not the formula <=D2+E2>.



Task 2: Copying a pivot table to a new worksheet as a plain table.

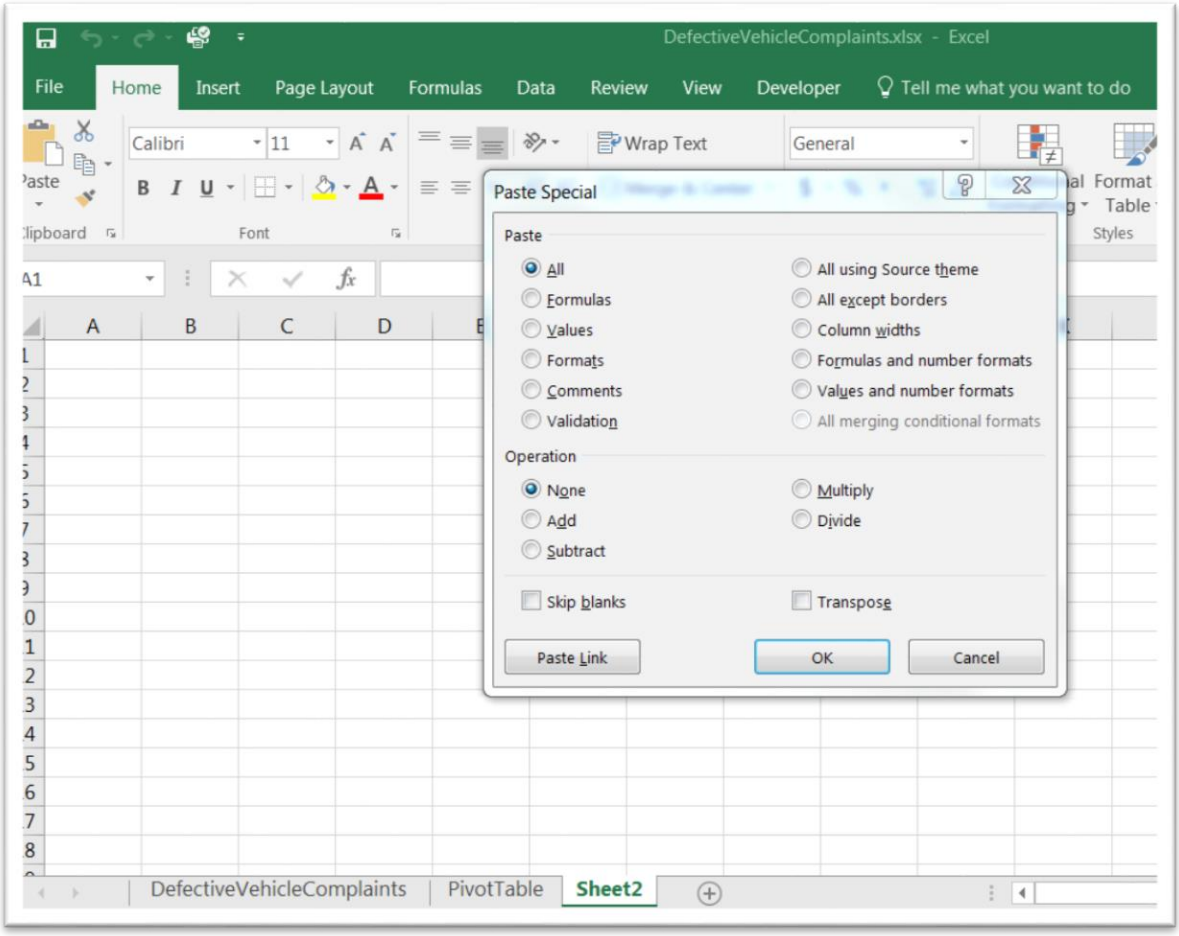
Downloadable data: You can download the sample data for this task here and use the worksheet called PivotTable.



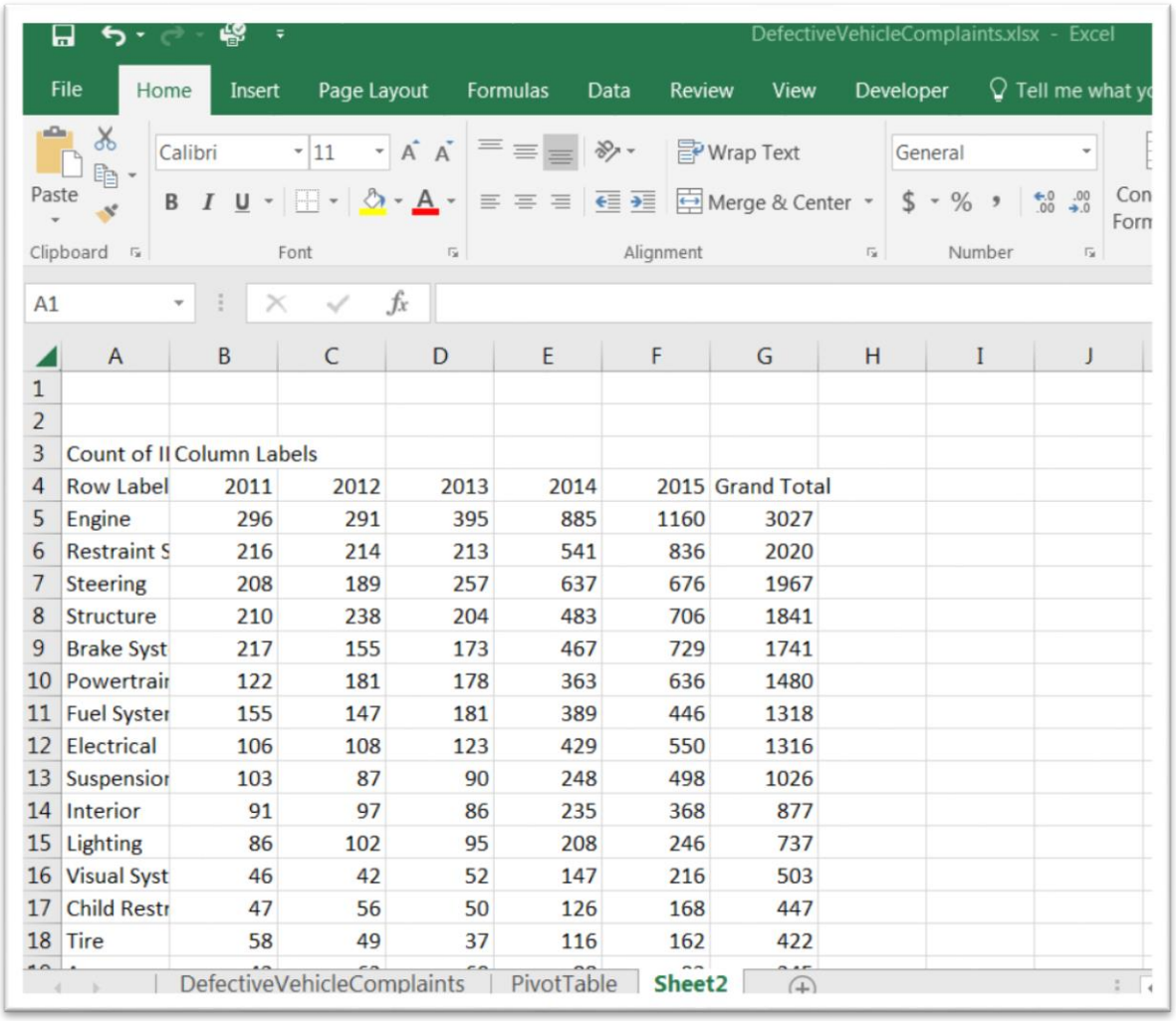
Pivot tables are great, but they eat up memory if you have a lot of them open at once. Besides, once you've finished your pivot table, you may be most interested in the results. Making a copy of the table as a plain text table is a great way to capture your results, perhaps for further calculations.

Copy the table, and go to the next empty worksheet.

As we did in task one, get the paste special dialogue box.

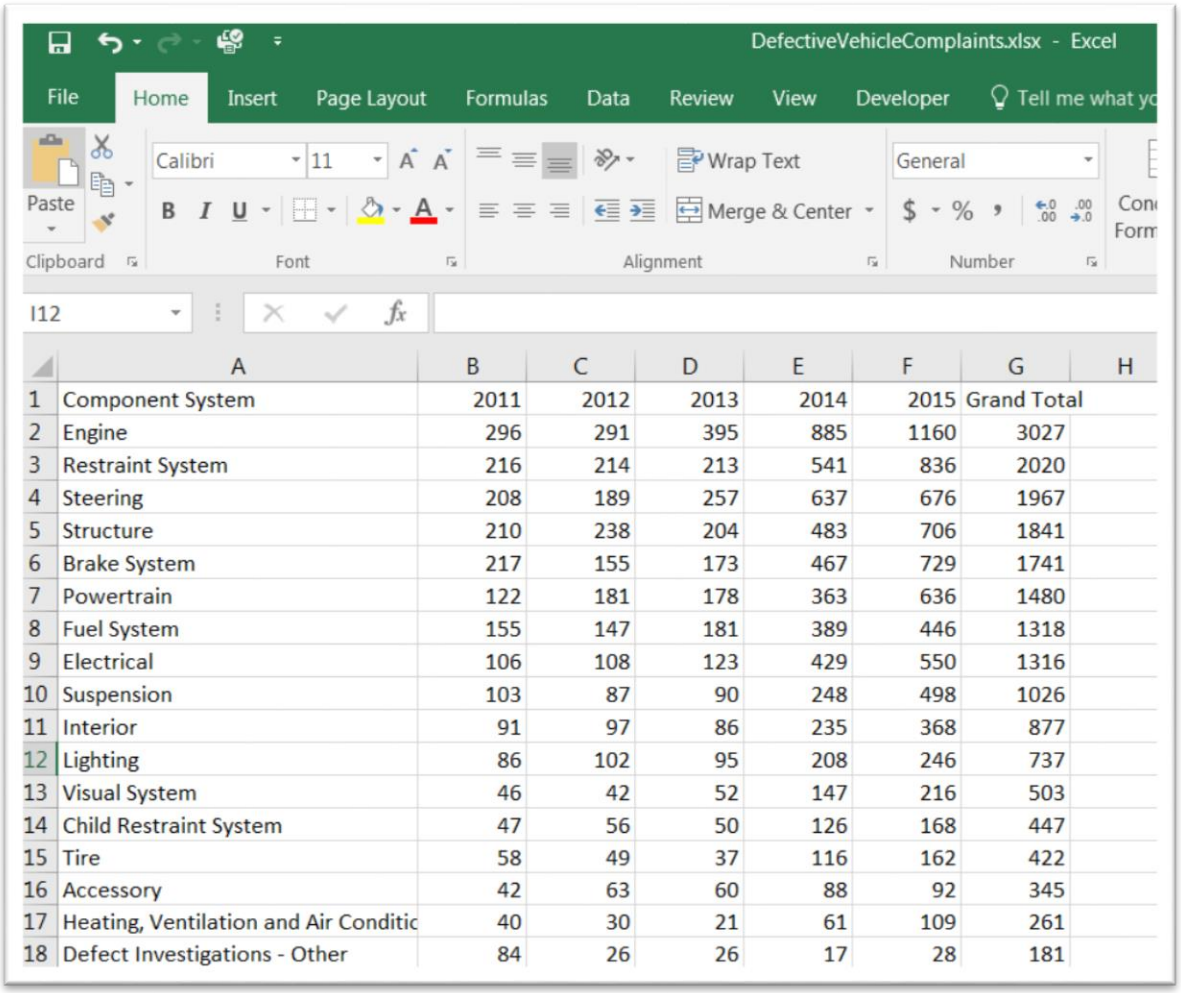


Select Values, and then the OK tab.



Not only does the paste special, get rid of the formula, but it also gets rid of the formatting. So we have to clean up this table by deleting the first three rows, and re-naming column A to something that makes more sense like

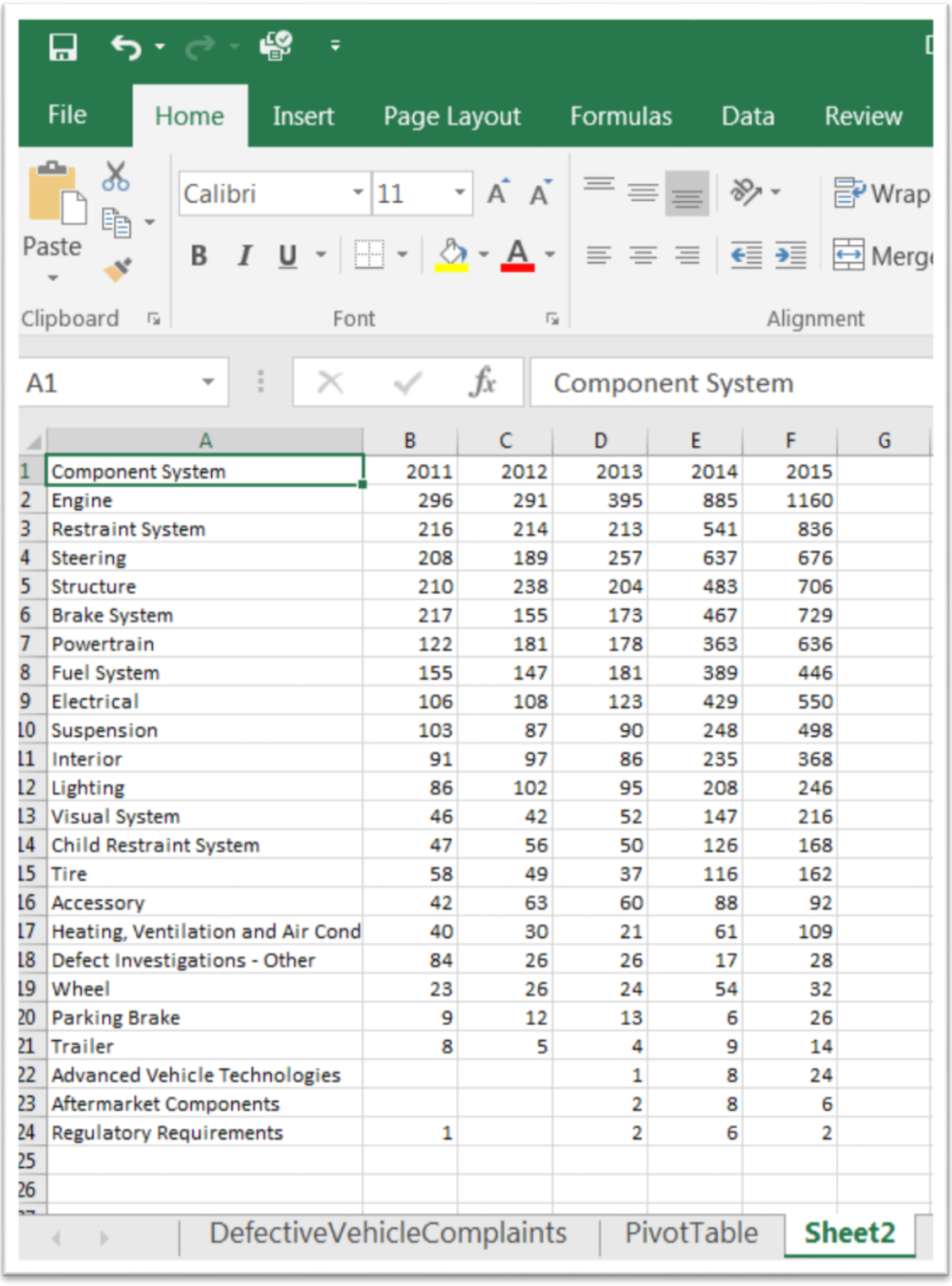
"Component System".



	A	B	C	D	E	F	G	H
1	Component System	2011	2012	2013	2014	2015	Grand Total	
2	Engine	296	291	395	885	1160	3027	
3	Restraint System	216	214	213	541	836	2020	
4	Steering	208	189	257	637	676	1967	
5	Structure	210	238	204	483	706	1841	
6	Brake System	217	155	173	467	729	1741	
7	Powertrain	122	181	178	363	636	1480	
8	Fuel System	155	147	181	389	446	1318	
9	Electrical	106	108	123	429	550	1316	
10	Suspension	103	87	90	248	498	1026	
11	Interior	91	97	86	235	368	877	
12	Lighting	86	102	95	208	246	737	
13	Visual System	46	42	52	147	216	503	
14	Child Restraint System	47	56	50	126	168	447	
15	Tire	58	49	37	116	162	422	
16	Accessory	42	63	60	88	92	345	
17	Heating, Ventilation and Air Conditic	40	30	21	61	109	261	
18	Defect Investigations - Other	84	26	26	17	28	181	

That's better. But we still have a bit of clean up left. Delete column G, the grand total column, and the grand total row 25 at the bottom. Since we'll be

doing our own calculations, we don’t need the totals.



File Home Insert Page Layout Formulas Data Review

Paste Calibri 11 Wrap Merge

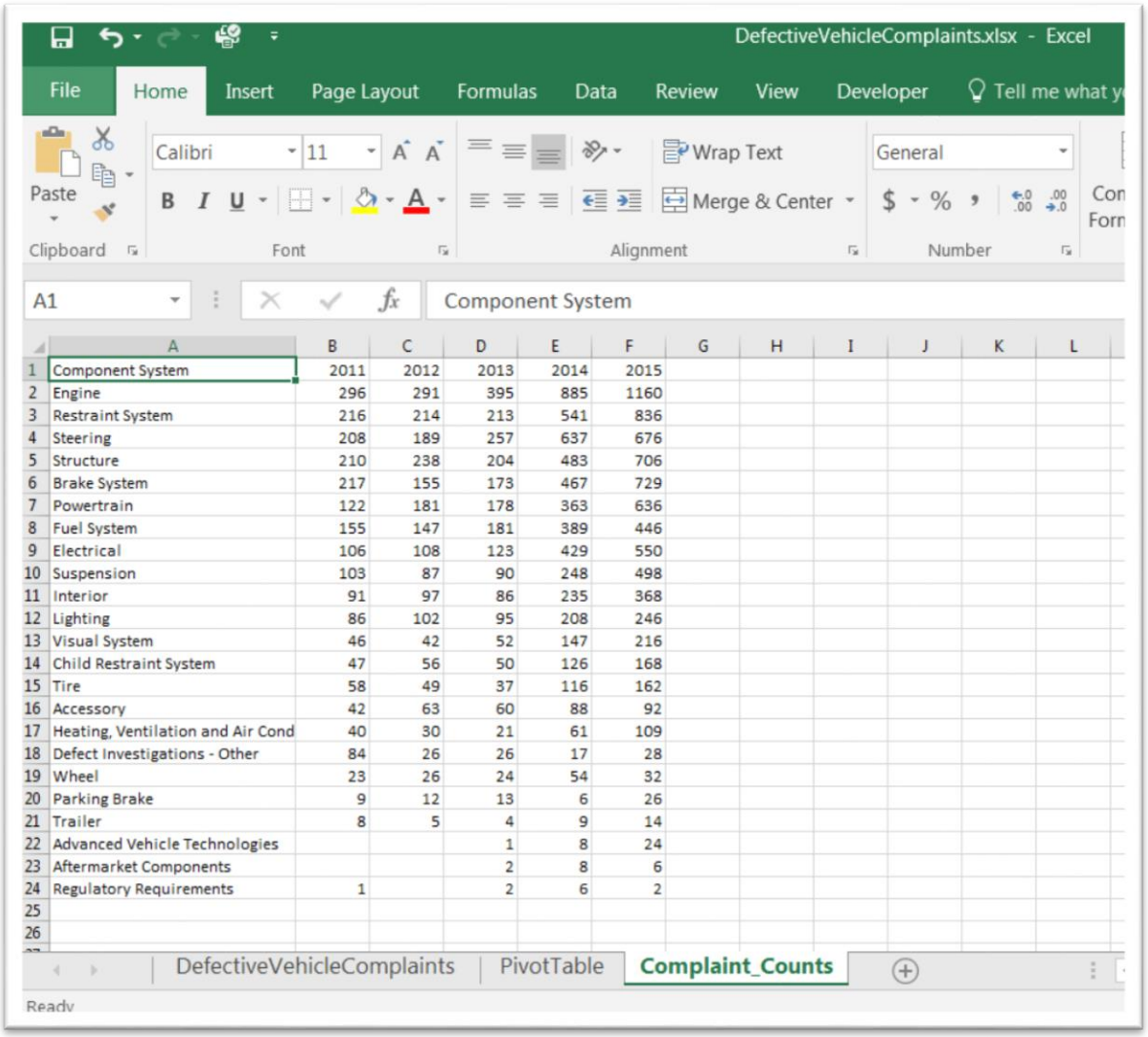
Clipboard Font Alignment

A1 Component System

	A	B	C	D	E	F	G
1	Component System	2011	2012	2013	2014	2015	
2	Engine	296	291	395	885	1160	
3	Restraint System	216	214	213	541	836	
4	Steering	208	189	257	637	676	
5	Structure	210	238	204	483	706	
6	Brake System	217	155	173	467	729	
7	Powertrain	122	181	178	363	636	
8	Fuel System	155	147	181	389	446	
9	Electrical	106	108	123	429	550	
10	Suspension	103	87	90	248	498	
11	Interior	91	97	86	235	368	
12	Lighting	86	102	95	208	246	
13	Visual System	46	42	52	147	216	
14	Child Restraint System	47	56	50	126	168	
15	Tire	58	49	37	116	162	
16	Accessory	42	63	60	88	92	
17	Heating, Ventilation and Air Cond	40	30	21	61	109	
18	Defect Investigations - Other	84	26	26	17	28	
19	Wheel	23	26	24	54	32	
20	Parking Brake	9	12	13	6	26	
21	Trailer	8	5	4	9	14	
22	Advanced Vehicle Technologies			1	8	24	
23	Aftermarket Components			2	8	6	
24	Regulatory Requirements	1		2	6	2	
25							
26							

DefectiveVehicleComplaints PivotTable Sheet2

Now rename the worksheet “Complaint_Counts”.



	A	B	C	D	E	F
1	Component System	2011	2012	2013	2014	2015
2	Engine	296	291	395	885	1160
3	Restraint System	216	214	213	541	836
4	Steering	208	189	257	637	676
5	Structure	210	238	204	483	706
6	Brake System	217	155	173	467	729
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10	Suspension	103	87	90	248	498
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20	Parking Brake	9	12	13	6	26
21	Trailer	8	5	4	9	14
22	Advanced Vehicle Technologies			1	8	24
23	Aftermarket Components			2	8	6
24	Regulatory Requirements	1		2	6	2
25						
26						

Now we can begin using the skills we learned in the “Calculating Rates and Percentages in a Spreadsheet tutorial.

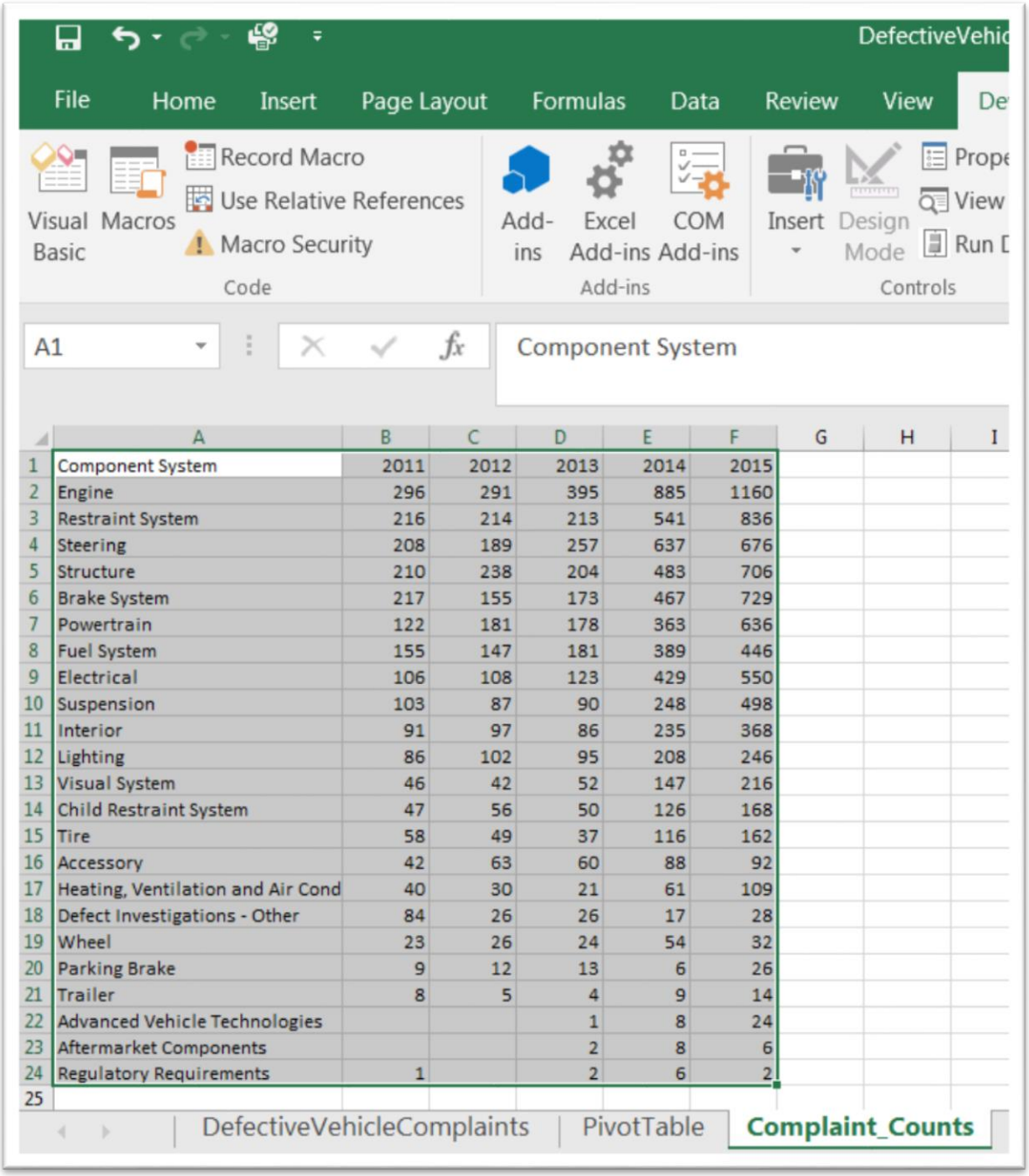
The paste-special command is commonly, especially with pivot tables because it allows us to continue our analysis with quick and easy calculations which can then be sorted and filtered, something that is not possible in pivot tables.

Task 3: Transposing the rows and columns of a worksheet.

Sometimes we get tables that are not conducive to easy analysis. For instance, the table may have dozens of columns and only a few rows. In this instance, it would be easier to summarize the information using the

techniques that we've learned so far by turning the columns into rows and rows into columns. To do this, we use the make more sense to the paste special "transpose" option. This converts a vertical range of cells to horizontal and vice-versa.

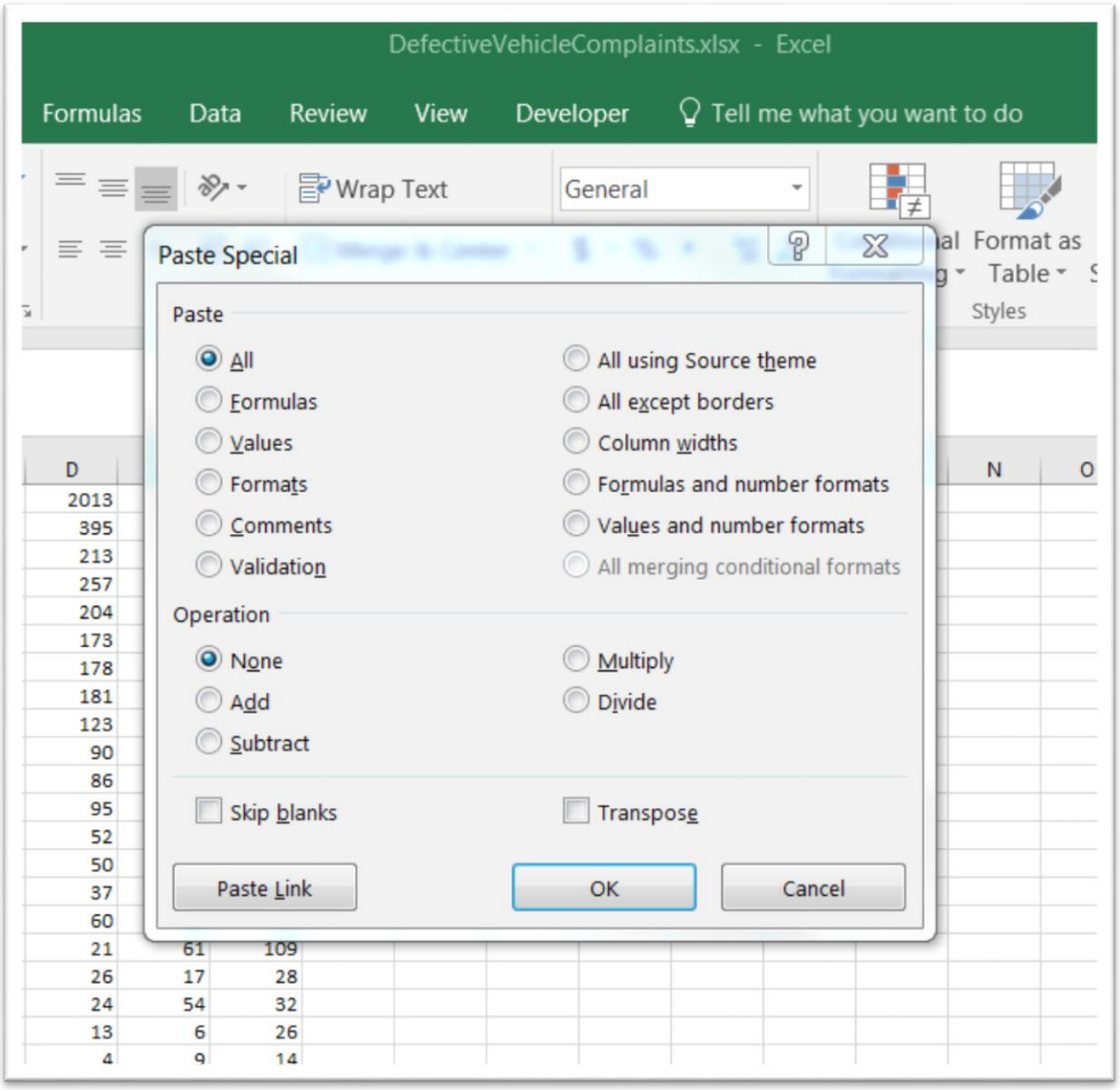
Let's see how this works using the example above. Highlight the table.



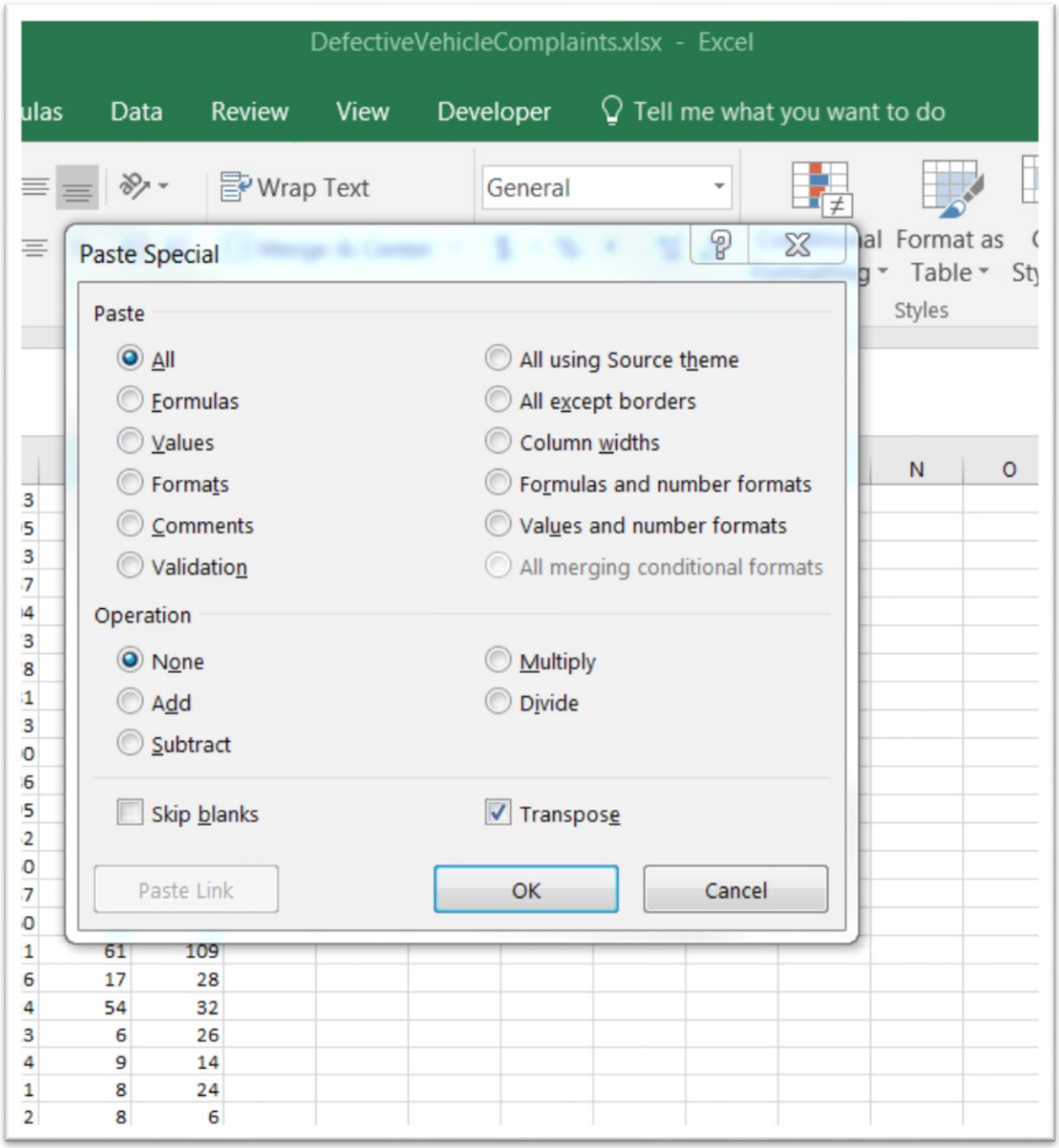
	A	B	C	D	E	F	G	H	I
1	Component System	2011	2012	2013	2014	2015			
2	Engine	296	291	395	885	1160			
3	Restraint System	216	214	213	541	836			
4	Steering	208	189	257	637	676			
5	Structure	210	238	204	483	706			
6	Brake System	217	155	173	467	729			
7	Powertrain	122	181	178	363	636			
8	Fuel System	155	147	181	389	446			
9	Electrical	106	108	123	429	550			
10	Suspension	103	87	90	248	498			
11	Interior	91	97	86	235	368			
12	Lighting	86	102	95	208	246			
13	Visual System	46	42	52	147	216			
14	Child Restraint System	47	56	50	126	168			
15	Tire	58	49	37	116	162			
16	Accessory	42	63	60	88	92			
17	Heating, Ventilation and Air Cond	40	30	21	61	109			
18	Defect Investigations - Other	84	26	26	17	28			
19	Wheel	23	26	24	54	32			
20	Parking Brake	9	12	13	6	26			
21	Trailer	8	5	4	9	14			
22	Advanced Vehicle Technologies			1	8	24			
23	Aftermarket Components			2	8	6			
24	Regulatory Requirements	1		2	6	2			
25									

Now copy it.

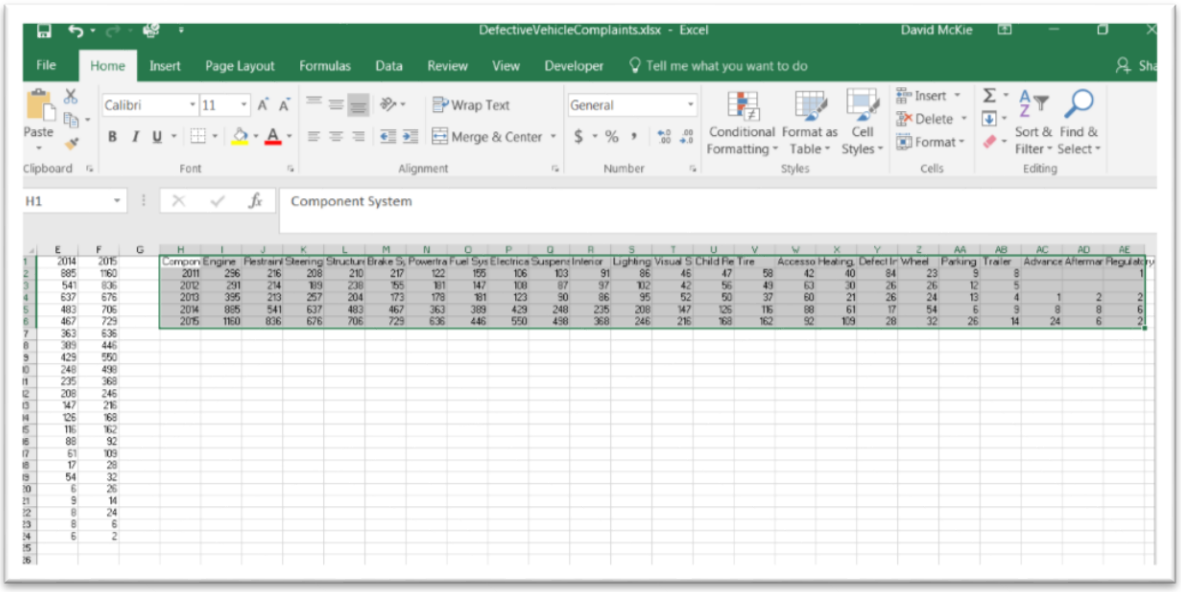
Place your cursor in H1, and obtain your paste special dialogue box.



Select the “Transpose option at the bottom.



Select the OK tab.



The order has been switched.

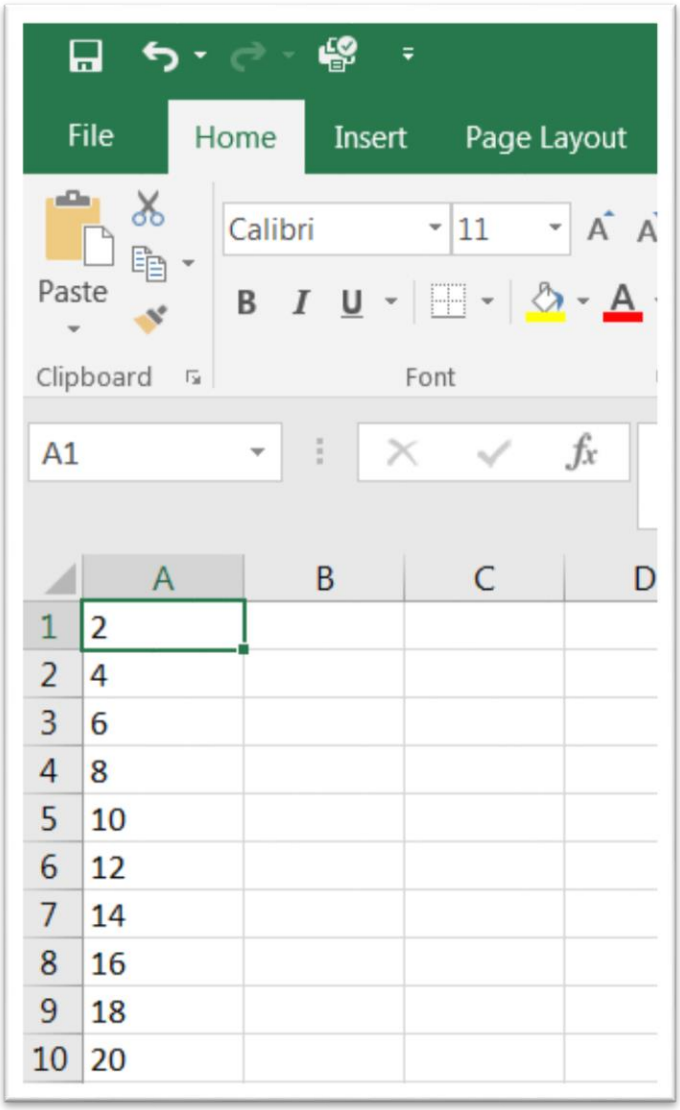
Task 4; Multiplying or dividing a range of values by another value.

As we've seen up until now, paste special is versatile, allowing you to make routine changes to your data. It also comes in handy when your spreadsheet has numbers that are actually text.

This is problematic because a spreadsheet can't perform math on values it reads as text. You can sum the number of fines, count the number of inspections, or calculate the per cent increases.

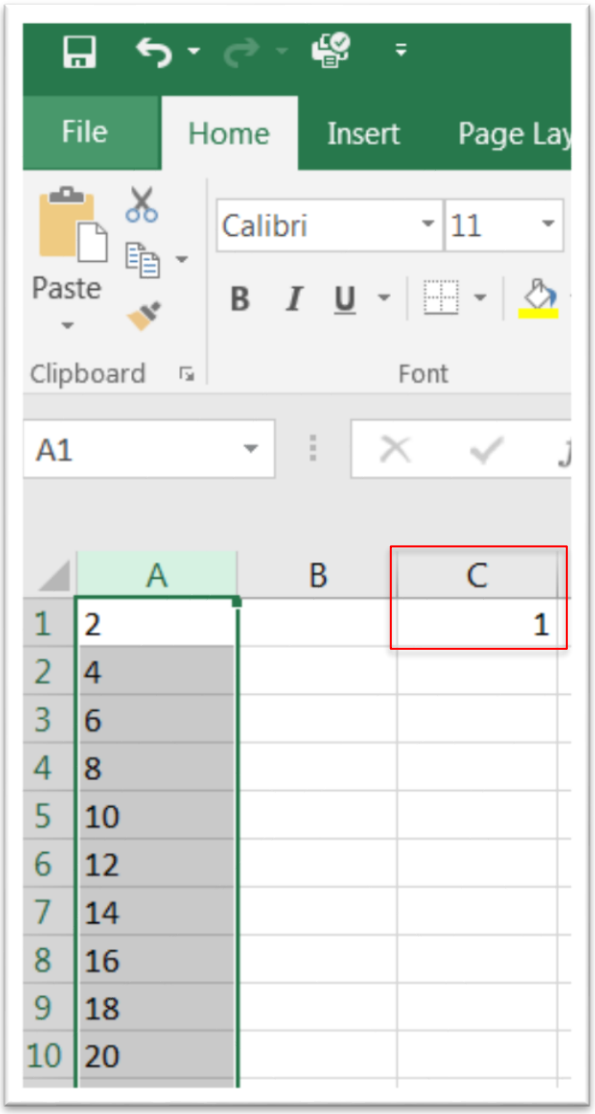
This is another instance where paste special comes in handy. You can often convert the text to numbers by placing the number "1" in an empty cell, and

selecting and copying it. So let's look at an example below.

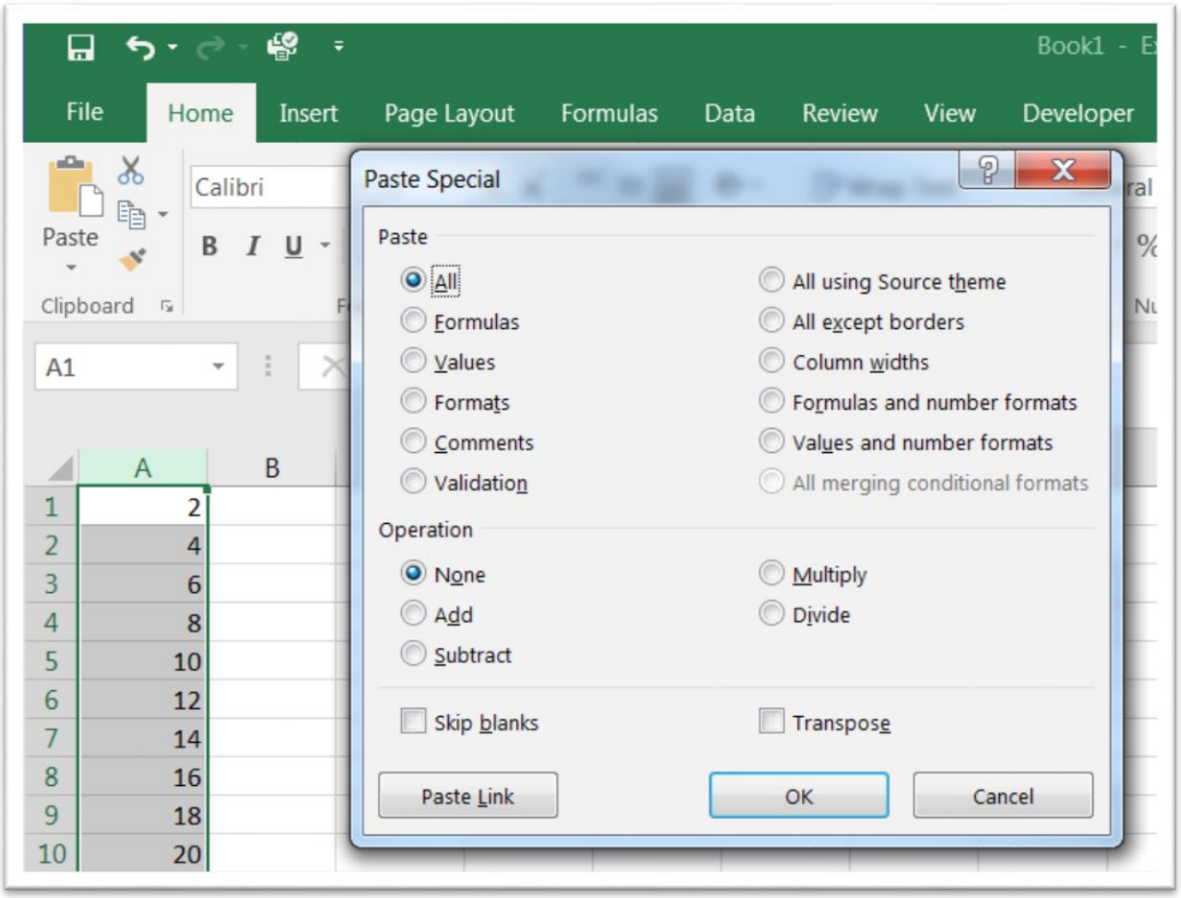


The text is contained in column A. We know this because they're justified to the left. We want to convert them to numbers. To do this, place the number

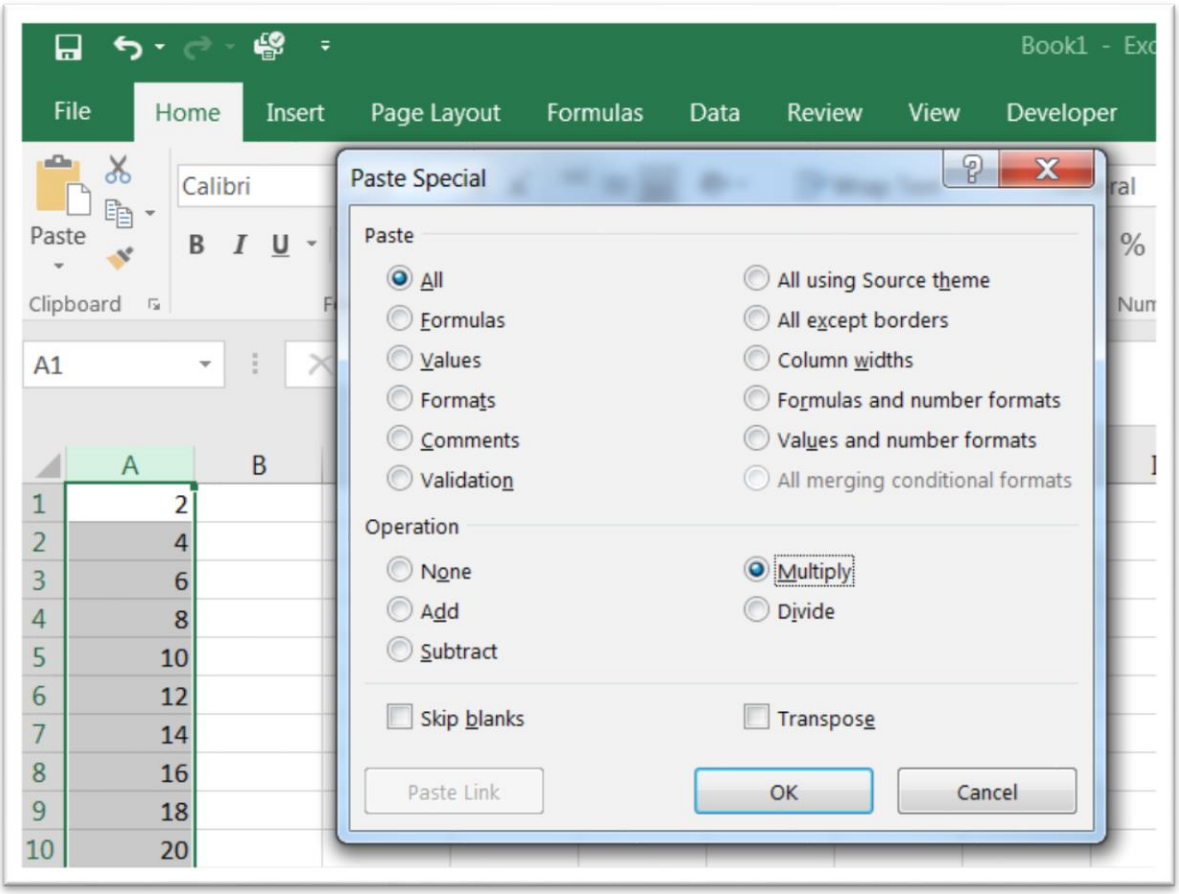
“1” in cell C1. Copy it, and then highlight column A.



Obtain the paste-special dialogue box using the steps we used in the previous tasks.



Choose the “Multiply” from the paste special dialogue box, and then the OK tab.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Paste Special
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Values
Formats
Comments
Validation
All using Source theme
All except borders
Column widths
Formulas and number formats
Values and number formats
All merging conditional formats
Operation
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Subtract
Multiply
Divide
Skip blanks
Transpose
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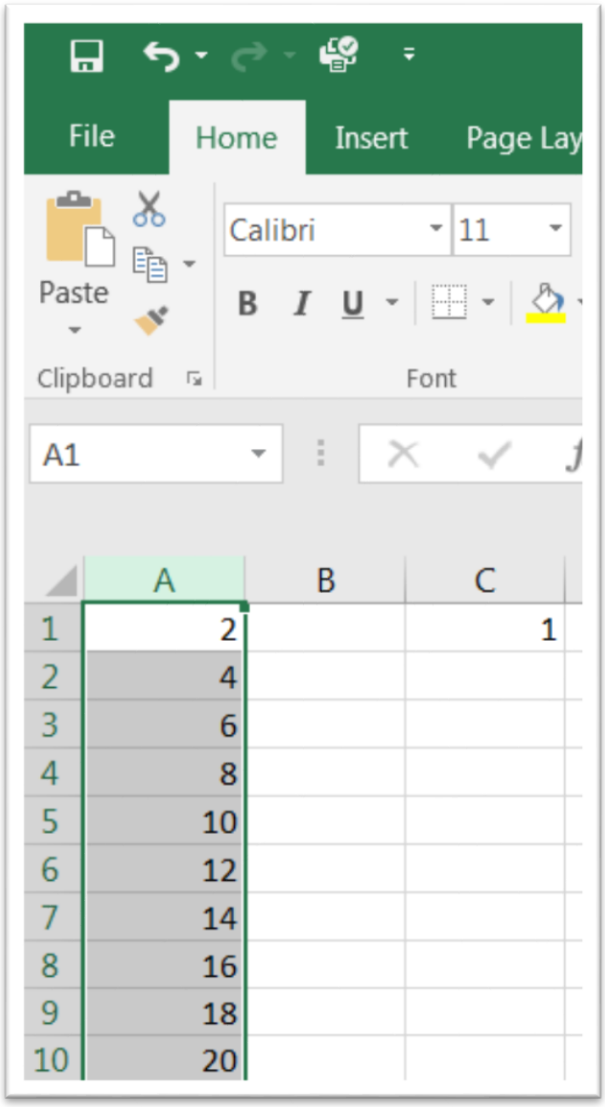

Now the numbers are actually numbers, allowing us to continue with our analysis.

Paste special is a very useful and versitile command, which makes it possible to conduct quick calculations that count, sum and calculate per cent changes.