

Pivot Tables: How to Avoid all that Copying-and-Pasting to Build a 2D Table



Oregon State
University
Mike Bailey

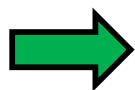
mjb@cs.oregonstate.edu

Note: you don't *absolutely* need to know about any of this. You can do perfectly well using the steps shown in the *Project Notes* to turn a linear print-out of data into a 2D table. Once you get used to them, however, Pivot Tables will save you time.



Remember This Slide from the Project Notes Noteset?

	A	B	C
1	1	1	1.44
2	1	10	3.99
3	1	100	8.07
4	1	1000	9.33
5	1	10000	23.4
6	1	100000	25.13
7	1	500000	25.97
8	2	1	0.23
9	2	10	4.62
10	2	100	19.26
11	2	1000	17.91
12	2	10000	34.34
13	2	100000	49.83
14	2	500000	49.27
15	4	1	0.34
16	4	10	0.259
17	4	100	16.7
18	4	1000	38.66
19	4	10000	82.39
20	4	100000	91.09
21	4	500000	91.49
22	8	1	0.26
23	8	10	2.39
24	8	100	16.21
25	8	1000	48.49
26	8	10000	137.59
27	8	100000	166.17
28	8	500000	181.62



The screenshot shows the Excel ribbon with the 'View' tab selected. The 'PivotTable' group is visible, showing options for 'Wrap Text', 'Merge & Center', 'General', 'Number', and 'Styles'. Below the ribbon, a PivotTable is displayed with the following data:

	E	F	G	H	I	J	K	L	M
		1	10	100	1000	10000	100000	500000	
	1	1.44	3.99	8.07	9.33	23.4	25.13	25.97	
	2	0.23	4.62	19.26	17.91	34.34	49.83	49.27	
	4	0.34	0.259	16.7	38.66	82.39	91.09	91.49	
	8	0.26	2.39	16.21	48.49	137.59	166.17	181.62	

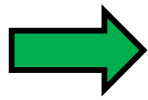
You will need to do some copying and pasting to get the linear format into this 2D format, but it will be worth it!

You can avoid *all* that copying and pasting by using an Excel feature called **Pivot Tables!** Here come the steps.



Step #1: Insert Column Heading Labels

	A	B	C
1	1	1	1.44
2	1	10	3.99
3	1	100	8.07
4	1	1000	9.33
5	1	10000	23.4
6	1	100000	25.13
7	1	500000	25.97
8	2	1	0.23
9	2	10	4.62
10	2	100	19.26
11	2	1000	17.91
12	2	10000	34.34
13	2	100000	49.83
14	2	500000	49.27
15	4	1	0.34
16	4	10	0.259
17	4	100	16.7
18	4	1000	38.66
19	4	10000	82.39
20	4	100000	91.09
21	4	500000	91.49
22	8	1	0.26
23	8	10	2.39
24	8	100	16.21
25	8	1000	48.49
26	8	10000	137.59
27	8	100000	166.17
28	8	500000	181.62

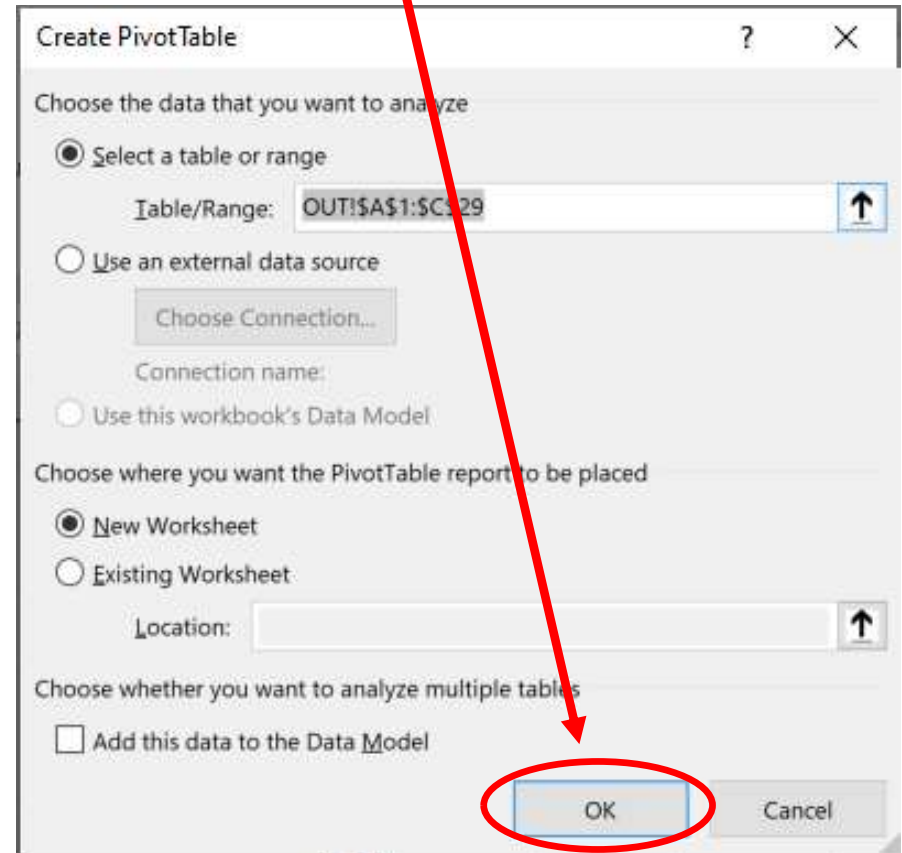
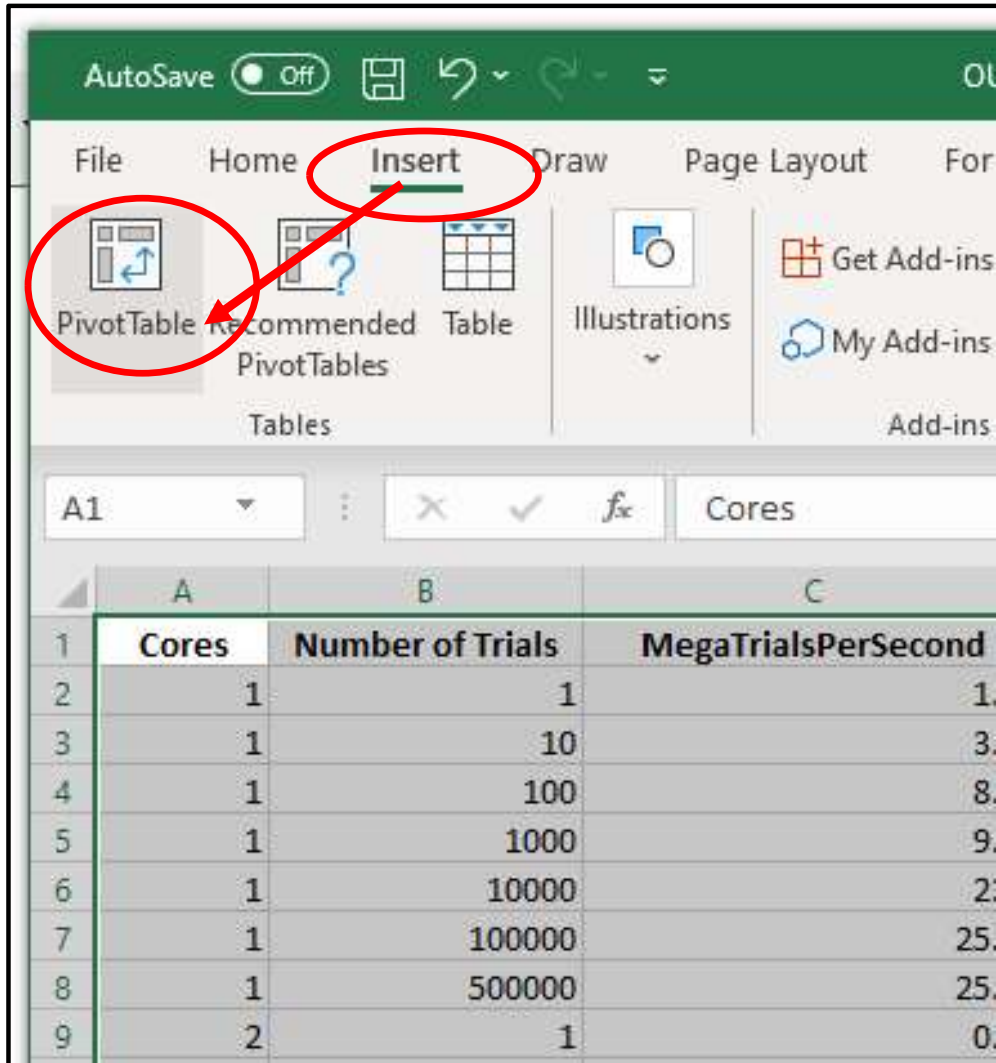


	A	B	C
1	Cores	Number of Trials	MegaTrialsPerSecond
2	1	1	1.44
3	1	10	3.99
4	1	100	8.07
5	1	1000	9.33
6	1	10000	23.4
7	1	100000	25.13
8	1	500000	25.97
9	2	1	0.23
10	2	10	4.62
11	2	100	19.26
12	2	1000	17.91

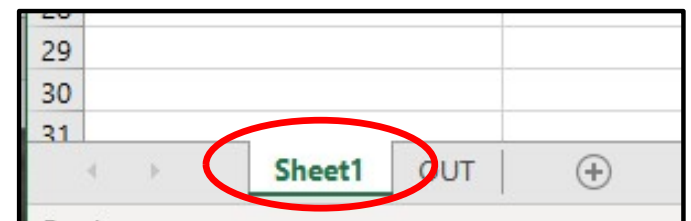
Step #2: Sweep Over the Entire Table, Including the Labels

	A	B	C
1	Cores	Number of Trials	MegaTrialsPerSecond
2	1	1	1.44
3	1	10	3.99
4	1	100	8.07
5	1	1000	9.33
6	1	10000	23.4
7	1	100000	25.13
8	1	500000	25.97
9	2	1	0.23
10	2	10	4.62
11	2	100	19.26
12	2	1000	17.91
13	2	10000	34.34
14	2	100000	49.83
15	2	500000	49.27
16	4	1	0.34
17	4	10	0.259
18	4	100	16.7
19	4	1000	38.66
20	4	10000	82.39
21	4	100000	91.09
22	4	500000	91.49
23	8	1	0.26
24	8	10	2.39
25	8	100	16.21
26	8	1000	48.49
27	8	10000	137.59
28	8	100000	166.17
29	8	500000	166.62
30			

Step #3: Insert → Pivot Table → OK



This will create a new worksheet.



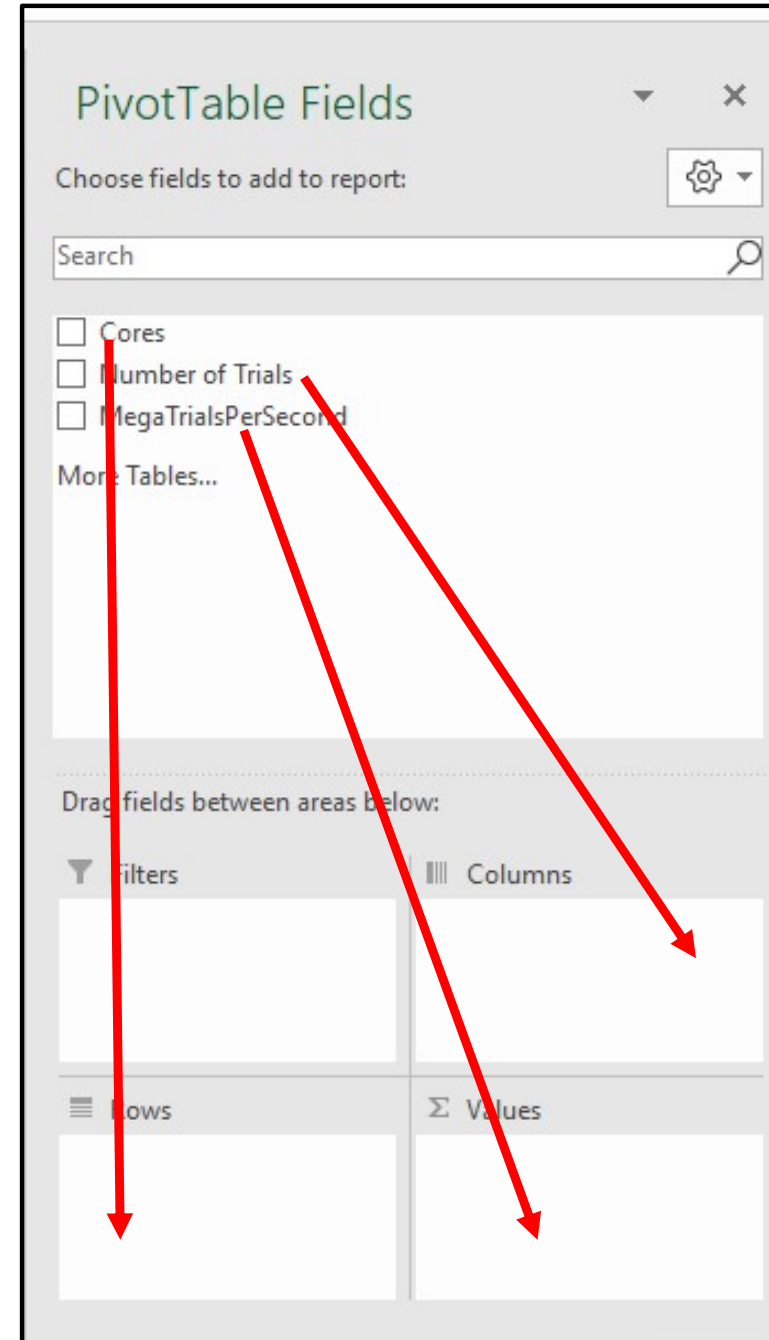
Step #4: Assign Roles for the Different Columns of Your Data

6

1. Drag **Cores** to **Rows**
2. Drag **Number of Trials** to **Columns**
3. Drag **MegaTrialsPerSecond** to **Values**

This defines how the 2D table will be created.

Note that you can have more than 3 columns of data to start with. This process just lets you pick which 3 will go into the 2D table.



Ta-Da! You Have a 2D Table with No Copying and Pasting!

Sum of MegaTrialsPerSecond	Column Labels	1	10	100	1000	10000	100000	500000	Grand Total
Row Labels									
1		1.44	3.99	8.07	9.33	23.4	25.13	25.97	97.33
2		0.23	4.62	19.26	17.91	34.34	49.83	49.27	175.46
4		0.34	0.259	16.7	38.66	82.39	91.09	91.49	320.929
8		0.26	2.39	16.21	48.49	137.39	100.17	101.62	552.73
Grand Total		2.27	11.259	60.24	114.39	277.72	332.22	348.35	146.449

PivotTable Fields

Choose fields to add to report:

Search

- Cores
- Number of Trials
- MegaTrialsPerSecond

More Tables...

Drag fields between areas below:

Filters

Columns
Number of Trials

Rows
Cores

Σ Values
Sum of MegaTrialsPer...

You can get rid of the **Grand Total** row and column – they have meaning in some spreadsheet applications, but not here.

But, You Can't Make a Graph from a Pivot Table, so Copy and Paste it into Normal Cells

Sweep over and Copy the Pivot Table:

Row Labels	1	10	100	1000	10000	100000	500000
1	1.44	3.99	8.07	9.33	23.4	25.13	25.97
2	0.23	4.62	19.26	17.91	34.34	49.83	49.27
4	0.34	0.259	16.7	38.66	82.39	91.09	91.49
8	0.26	2.39	16.21	48.49	137.59	166.17	181.62

Paste those numbers somewhere else:

Row Labels	1	10	100	1000	10000	100000	500000
1	1.44	3.99	8.07	9.33	23.4	25.13	25.97
2	0.23	4.62	19.26	17.91	34.34	49.83	49.27
4	0.34	0.259	16.7	38.66	82.39	91.09	91.49
8	0.26	2.39	16.21	48.49	137.59	166.17	181.62

Clear the **Row Labels** cell:

	1	10	100	1000	10000	100000	500000
1	1.44	3.99	8.07	9.33	23.4	25.13	25.97
2	0.23	4.62	19.26	17.91	34.34	49.83	49.27
4	0.34	0.259	16.7	38.66	82.39	91.09	91.49
8	0.26	2.39	16.21	48.49	137.59	166.17	181.62

Sweep Over the New 2D Table and Copy → Insert your graph, Just like in the Project Notes

