Data Analytics Tutorial: Sales, Cost, and Gross Profit Analysis Using Excel Pivot Tables and Charts

Cabinet Accessories Company (CAC) dataset

Welcome to this data analytics tutorial that covers sales, cost, and gross profit analysis using pivot tables and charts in Excel.

Cabinet Accessories Company (CAC)

- CAC is a fictitious company that sells cabinet hardware including knobs and pulls
- Data set contains sales and cost data for 2014 – 2018
- In this tutorial, we are using a small, 36-record data set
- For the actual activity, you will be using the full data set so answers will be different but the process will be similar

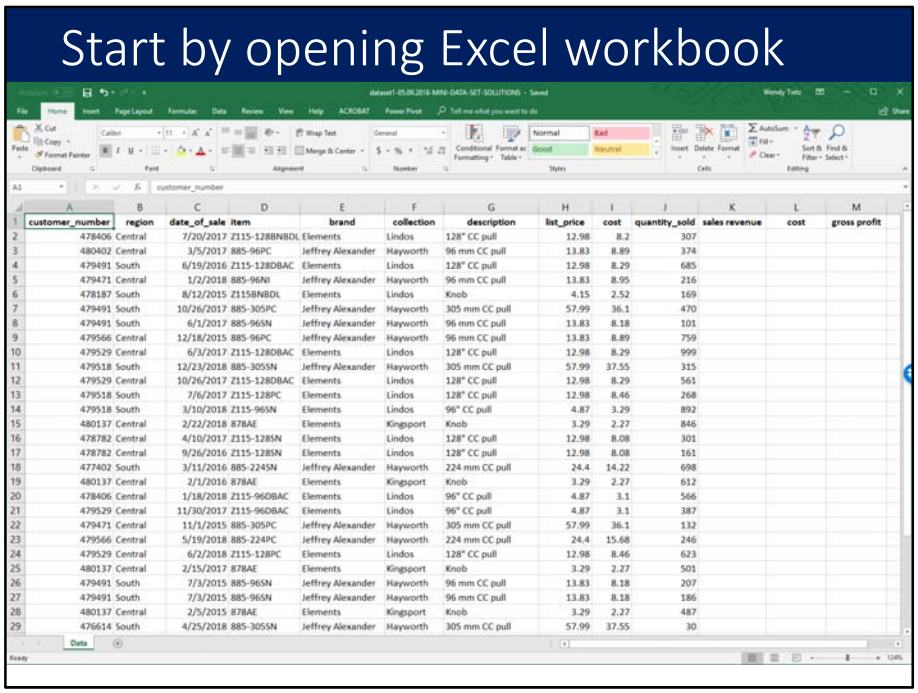
In this activity, we are using a sales and cost data set for a fictitious company, Cabinet Accessories Company (CAC.) The sales and cost data covers 2014 – 2018. For this tutorial only, we are using a small, 36-record data set. For the actual activity, you will be using the full data set so your answers for the activity requirements will be different – but the process will be similar.

Pivot tables and pivot charts

- Using Office 365 Excel in Windows in this tutorial
- Other versions of Excel may be slightly different
- May be many ways of accomplishing the same thing – just presenting one way here

For this tutorial on pivot tables and pivot charts, we will be demonstrating using Office 365 Excel for Windows. Other versions of Excel may be slightly different. Also note that there may be many ways of accomplishing the same thing – we are just presenting one way here. Make sure your version of Office 365 is updated; you may not see things the same way if you have not updated recently.

Start by opening Excel workbook



customer_number	region	date_of_sale	item	brand	collection	description	list_price	cost	quantity_sold	sales revenue	cost	gross profit
478406	Central	7/20/2017	Z115-128BNBDL	Elements	Lindos	128" CC pull	12.98	8.2	307			
480402	Central	3/5/2017	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	374			
479491	South	6/19/2016	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	685			
479471	Central	1/2/2018	885-96NI	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.95	216			
478187	South	8/12/2015	Z115BNBDL	Elements	Lindos	Knob	4.15	2.52	169			
479491	South	10/26/2017	885-305PC	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	36.1	470			
479491	South	6/1/2017	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	101			
479566	Central	12/18/2015	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	759			
479529	Central	6/3/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	999			
479518	South	12/23/2018	885-305SN	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	37.55	315			
479529	Central	10/26/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	561			
479518	South	7/6/2017	Z115-128PC	Elements	Lindos	128" CC pull	12.98	8.46	268			
479518	South	3/10/2018	Z115-96SN	Elements	Lindos	96" CC pull	4.87	3.29	892			
480137	Central	2/22/2018	878AE	Elements	Kingsport	Knob	3.29	2.27	846			
478782	Central	4/10/2017	Z115-1285N	Elements	Lindos	128" CC pull	12.98	8.08	301			
478782	Central	9/26/2016	Z115-1285N	Elements	Lindos	128" CC pull	12.98	8.08	161			
477402	South	3/11/2016	885-224SN	Jeffrey Alexander	Hayworth	224 mm CC pull	24.4	14.22	698			
480137	Central	2/1/2016	878AE	Elements	Kingsport	Knob	3.29	2.27	612			
478406	Central	1/18/2018	Z115-96DBAC	Elements	Lindos	96" CC pull	4.87	3.1	566			
479529	Central	11/30/2017	Z115-96DBAC	Elements	Lindos	96" CC pull	4.87	3.1	387			
479471	Central	11/1/2015	885-305PC	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	36.1	132			
479566	Central	5/19/2018	885-224PC	Jeffrey Alexander	Hayworth	224 mm CC pull	24.4	15.68	246			
479529	Central	6/2/2018	Z115-128PC	Elements	Lindos	128" CC pull	12.98	8.46	623			
480137	Central	2/15/2017	878AE	Elements	Kingsport	Knob	3.29	2.27	501			
479491	South	7/3/2015	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	207			
479491	South	7/3/2015	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	186			
480137	Central	2/5/2015	878AE	Elements	Kingsport	Knob	3.29	2.27	487			
476614	South	4/25/2018	885-305SN	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	37.55	30			

Start this activity by opening the Excel workbook containing the data set.

General instructions

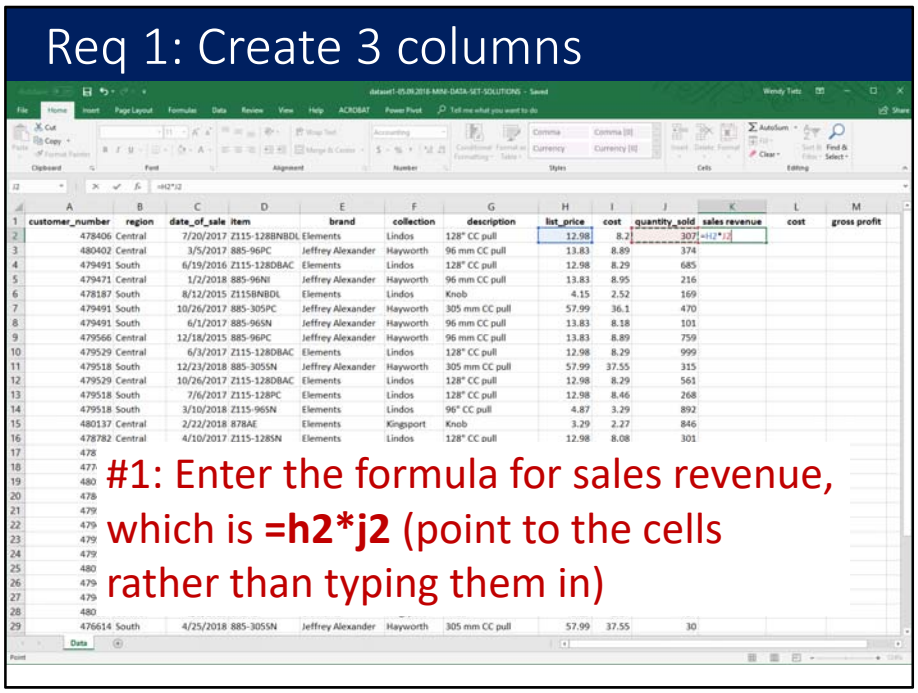
For each of the requirements (except Requirement 1), create a new pivot table in a new worksheet. Name each new worksheet as “Req 2,” “Req 3,” etc. If instructed, format the dollar amounts in each pivot table or pivot chart using the accounting format with two decimal places.

In general, for each of the requirements in this activity (except for Requirement 1), create a new pivot table in a new worksheet. Name each new worksheet as “Req 2,” “Req 3,” etc. If instructed, format the dollar amounts in each pivot table or pivot chart using the accounting format with two decimal places.

Requirement 1

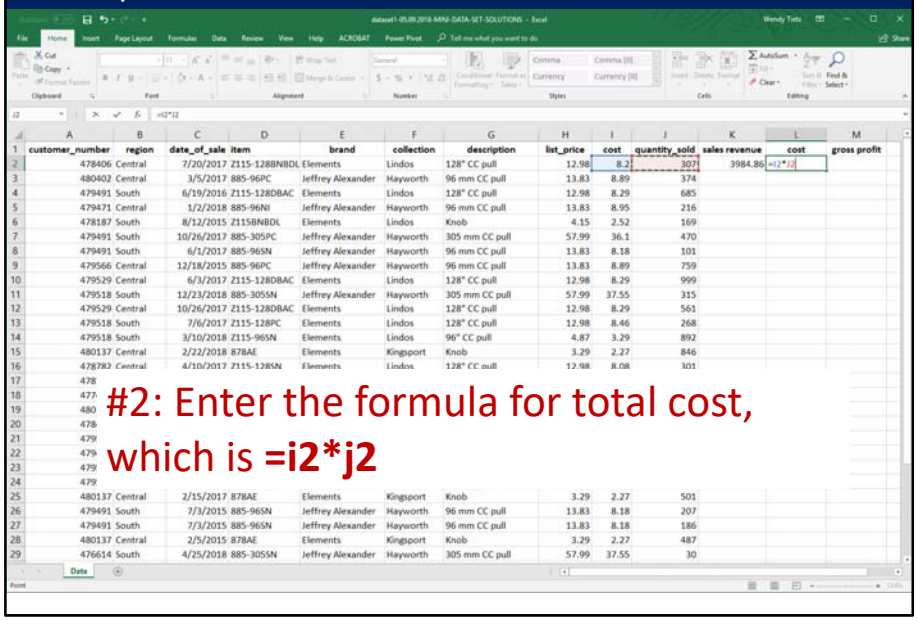
Create three columns in the Data worksheet that calculate sales revenue, cost, and gross profit for each sales record

Requirement 1 asks “Create three columns in the Data worksheet that calculate sales revenue, cost, and gross profit for each sales record.”



For the first step in the first requirement, to go Cell K2 in the Data worksheet, which is the cell under the column heading sales revenue. Enter the formula for sales revenue, which is =h2*j2. Point to the cells rather than typing them in.

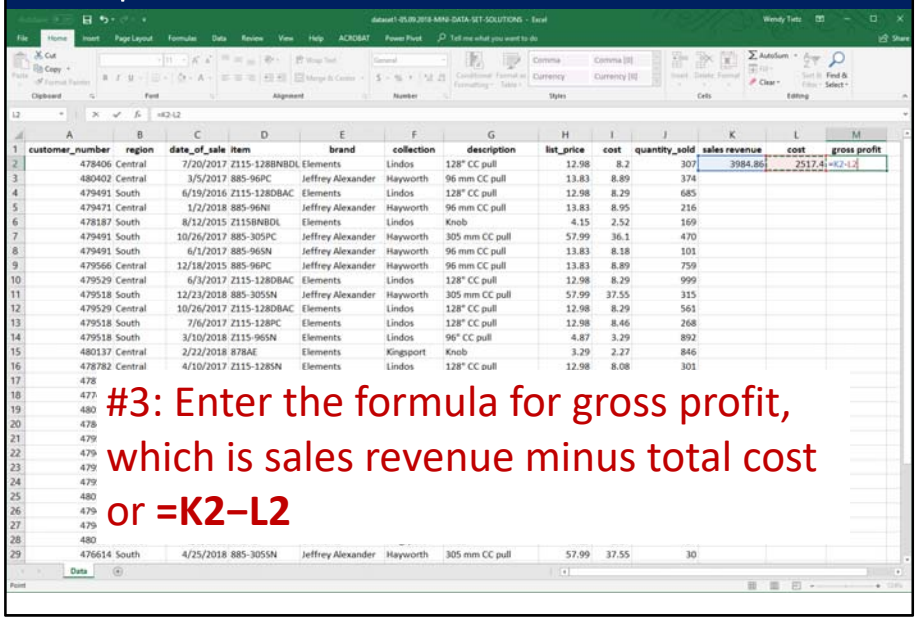
Req 1: Create 3 columns



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	customer_number	region	date_of_sale	item	brand	collection	description	list_price	cost	quantity_sold	sales revenue	cost	gross profit
2	478406	Central	7/20/2017	Z115-128BNBDL	Elements	Lindos	128" CC pull	12.98	8.2	307	3984.86	=i2*j2	
3	480402	Central	3/5/2017	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	374			
4	479491	South	6/19/2016	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	685			
5	479471	Central	1/2/2018	885-96NI	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.95	216			
6	478187	South	8/12/2015	Z115BNBDL	Elements	Lindos	Knob	4.15	2.52	169			
7	479491	South	10/26/2017	885-305PC	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	36.1	470			
8	479491	South	6/1/2017	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	101			
9	479566	Central	12/18/2015	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	759			
10	479529	Central	6/3/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	999			
11	479518	South	12/23/2018	885-305SN	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	37.55	315			
12	479529	Central	10/26/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	561			
13	479518	South	7/6/2017	Z115-128PC	Elements	Lindos	128" CC pull	12.98	8.46	268			
14	479518	South	3/10/2018	Z115-965N	Elements	Lindos	96" CC pull	4.87	3.29	892			
15	480137	Central	2/22/2018	878AE	Elements	Kingsport	Knob	3.29	2.27	846			
16	478782	Central	4/10/2017	Z115-128SN	Elements	Lindos	128" CC pull	12.98	8.08	301			
17	478												
18	477												
19	480												
20	478												
21	479												
22	479												
23	479												
24	479												
25	480137	Central	2/15/2017	878AE	Elements	Kingsport	Knob	3.29	2.27	501			
26	479491	South	7/3/2015	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	207			
27	479491	South	7/3/2015	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	186			
28	480137	Central	2/5/2015	878AE	Elements	Kingsport	Knob	3.29	2.27	487			
29	476614	South	4/25/2018	885-305SN	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	37.55	30			

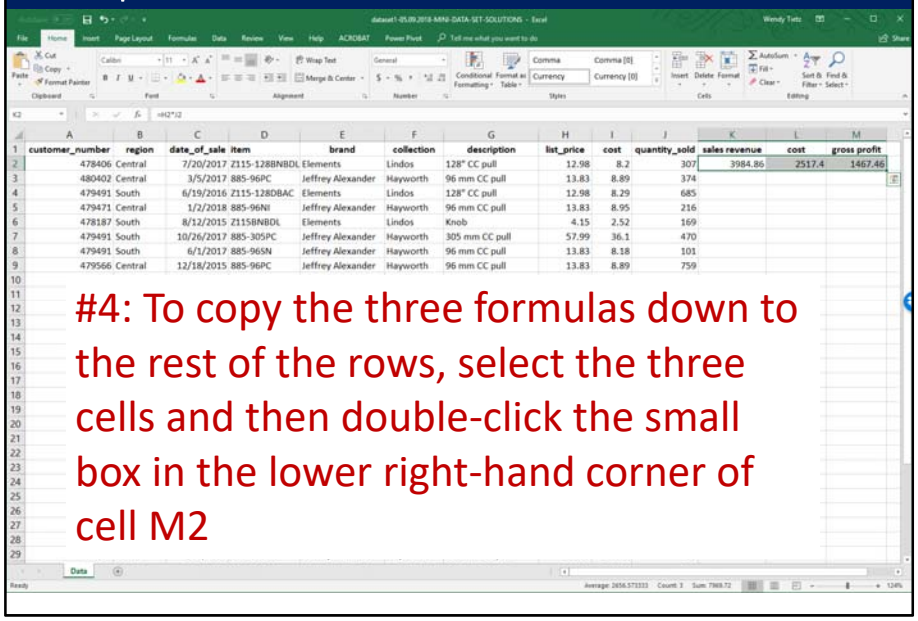
For the second step, click in Cell L2, which is right below the column heading total cost. Enter the formula for total cost, which is =i2*j2. Again, point to the cells rather than typing in the names.

Req 1: Create 3 columns



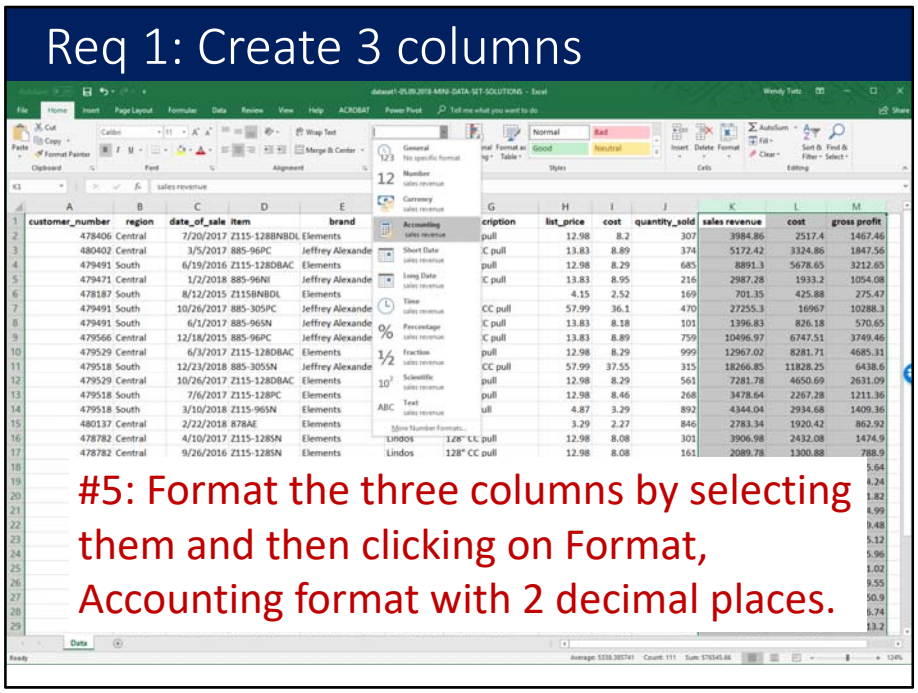
For the third column, click in cell M2, which is the cell right below the column heading of gross profit. Enter the formula for gross profit, which is sales revenue minus total cost or=K2−L2 (again, point to the cells rather than typing them in – there is a lot less potential for error that way.)

Req 1: Create 3 columns



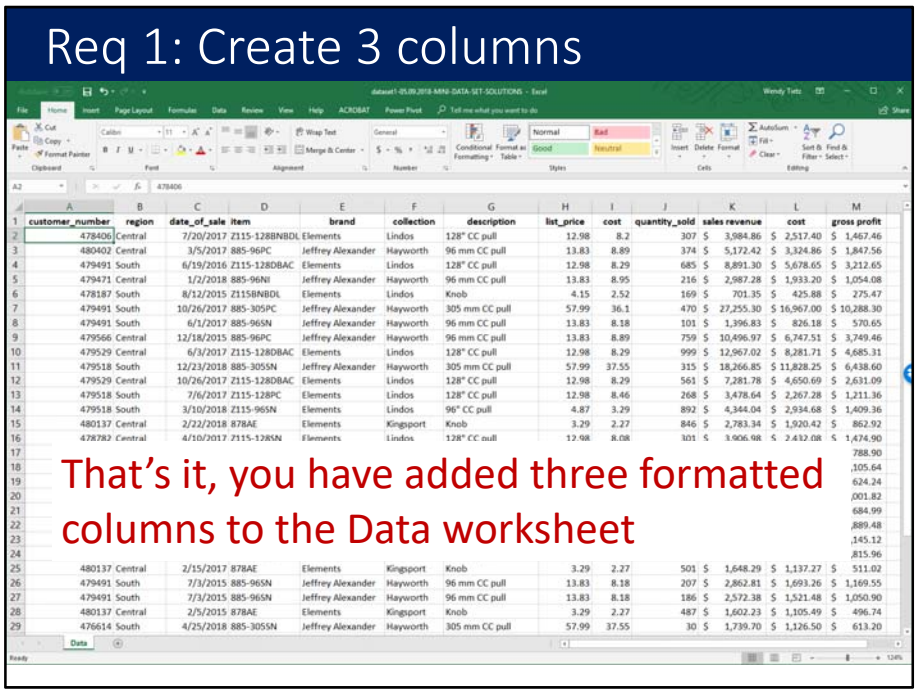
	A	B	C	D	E	F	G	H	I	J	K	L	M
1	customer_number	region	date_of_sale	item	brand	collection	description	list_price	cost	quantity_sold	sales revenue	cost	gross profit
2	478406	Central	7/20/2017	Z115-128BNBDL	Elements	Lindos	128" CC pull	12.98	8.2	307	3984.86	2517.4	1467.46
3	480402	Central	3/5/2017	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	374			
4	479491	South	6/19/2016	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	685			
5	479471	Central	1/2/2018	885-96NI	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.95	216			
6	478187	South	8/12/2015	Z115BNBDL	Elements	Lindos	Knob	4.15	2.52	169			
7	479491	South	10/26/2017	885-305PC	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	36.1	470			
8	479491	South	6/1/2017	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	101			
9	479566	Central	12/18/2015	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	759			

In the fourth step, copy the three formulas down to the rest of the rows by selecting the three cells and then double-clicking the small box in the lower right-hand corner of cell M2.



For Step 5, format the three columns by selecting the columns and then clicking on Format, Accounting format with 2 decimal places.

Req 1: Create 3 columns



customer_number	region	date_of_sale	item	brand	collection	description	list_price	cost	quantity_sold	sales revenue	cost	gross profit
478406	Central	7/20/2017	Z115-128BNBDL	Elements	Lindos	128" CC pull	12.98	8.2	307	$ 3,984.86	$ 2,517.40	$ 1,467.46
480402	Central	3/5/2017	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	374	$ 5,172.42	$ 3,324.86	$ 1,847.56
479491	South	6/19/2016	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	685	$ 8,891.30	$ 5,678.65	$ 3,212.65
479471	Central	1/2/2018	885-96NI	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.95	216	$ 2,987.28	$ 1,933.20	$ 1,054.08
478187	South	8/12/2015	Z115BNBDL	Elements	Lindos	Knob	4.15	2.52	169	$ 701.35	$ 425.88	$ 275.47
479491	South	10/26/2017	885-305PC	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	36.1	470	$ 27,255.30	$ 16,967.00	$ 10,288.30
479491	South	6/1/2017	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	101	$ 1,396.83	$ 826.18	$ 570.65
479566	Central	12/18/2015	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	759	$ 10,496.97	$ 6,747.51	$ 3,749.46
479529	Central	6/3/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	999	$ 12,967.02	$ 8,281.71	$ 4,685.31
479518	South	12/23/2018	885-305SN	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	37.55	315	$ 18,266.85	$ 11,828.25	$ 6,438.60
479529	Central	10/26/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	561	$ 7,281.78	$ 4,650.69	$ 2,631.09
479518	South	7/6/2017	Z115-128PC	Elements	Lindos	128" CC pull	12.98	8.46	268	$ 3,478.64	$ 2,267.28	$ 1,211.36
479518	South	3/10/2018	Z115-96SN	Elements	Lindos	96" CC pull	4.87	3.29	892	$ 4,344.04	$ 2,934.68	$ 1,409.36
480137	Central	2/22/2018	878AE	Elements	Kingsport	Knob	3.29	2.27	846	$ 2,783.34	$ 1,920.42	$ 862.92
478782	Central	4/10/2017	Z115-128SN	Elements	Lindos	128" CC pull	12.98	8.08	101	$ 3,906.98	$ 2,432.08	$ 1,474.90
												788.90
												,105.64
												624.24
												,001.82
												684.99
												,889.48
												,145.12
												,815.96
480137	Central	2/15/2017	878AE	Elements	Kingsport	Knob	3.29	2.27	501	$ 1,648.29	$ 1,137.27	$ 511.02
479491	South	7/3/2015	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	207	$ 2,862.81	$ 1,693.26	$ 1,169.55
479491	South	7/3/2015	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	186	$ 2,572.38	$ 1,521.48	$ 1,050.90
480137	Central	2/5/2015	878AE	Elements	Kingsport	Knob	3.29	2.27	487	$ 1,602.23	$ 1,105.49	$ 496.74
476614	South	4/25/2018	885-305SN	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	37.55	30	$ 1,739.70	$ 1,126.50	$ 613.20

That's it, you have added three formatted columns to the Data worksheet

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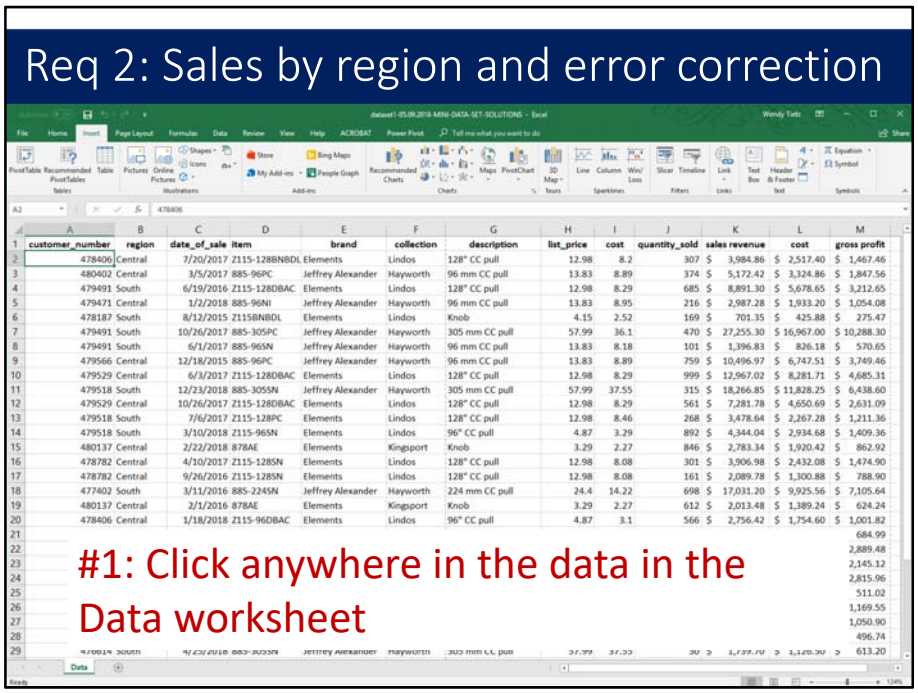
Requirement 2

Create a pivot table that shows sales revenue by region for each year. Correct any errors in the data set. Insert a pivot chart to show sales trends.

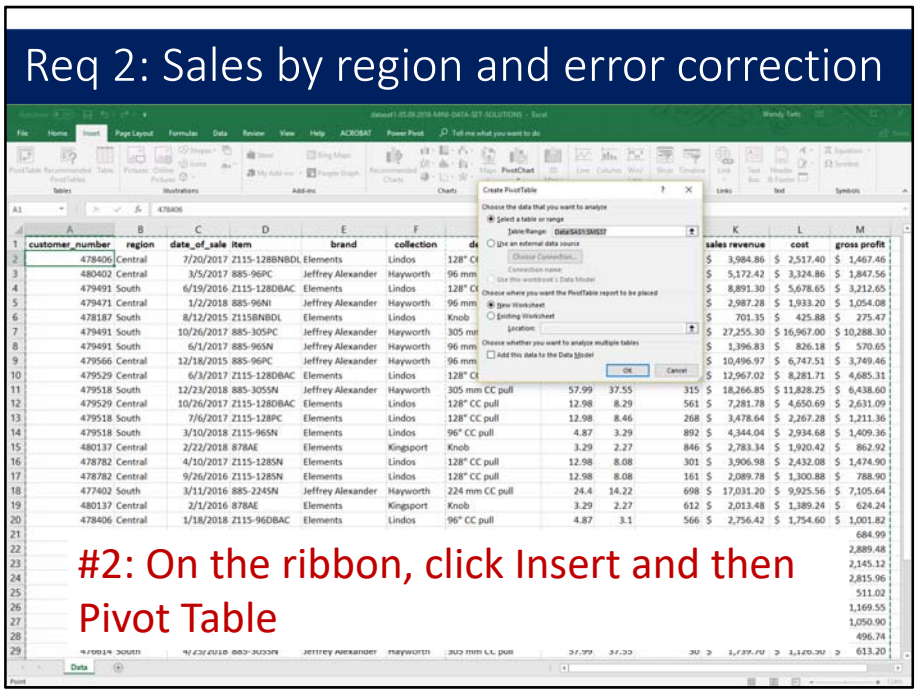
Requirement 2 states “Create a pivot table that shows sales revenue by region for each year. Correct any errors in the data set. Insert a pivot chart to show sales trends.”

Req 2: Sales by region and error correction

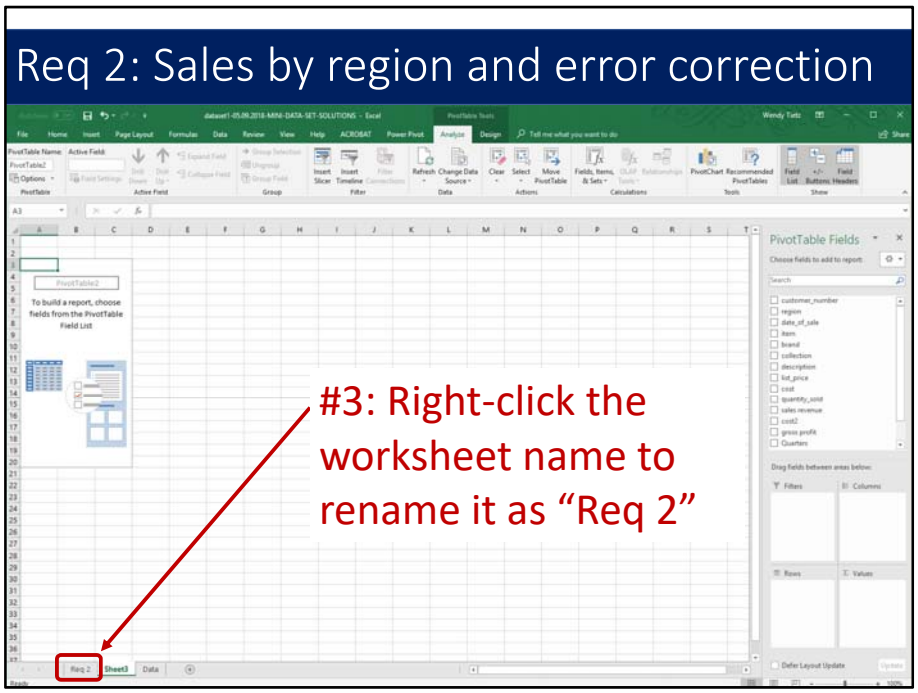


customer_number	region	date_of_sale	item	brand	collection	description	list_price	cost	quantity_sold	sales revenue	cost	gross profit
478406	Central	7/20/2017	Z115-128BNBDL	Elements	Lindos	128" CC pull	12.98	8.2	307	$ 3,984.86	$ 2,517.40	$ 1,467.46
480402	Central	3/5/2017	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	374	$ 5,172.42	$ 3,324.86	$ 1,847.56
479491	South	6/19/2016	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	685	$ 8,891.30	$ 5,678.65	$ 3,212.65
479471	Central	1/2/2018	885-96NI	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.95	216	$ 2,987.28	$ 1,933.20	$ 1,054.08
478187	South	8/12/2015	Z115BNBDL	Elements	Lindos	Knob	4.15	2.52	169	$ 701.35	$ 425.88	$ 275.47
479491	South	10/26/2017	885-305PC	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	36.1	470	$ 27,255.30	$ 16,967.00	$ 10,288.30
479491	South	6/1/2017	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	101	$ 1,396.83	$ 826.18	$ 570.65
479566	Central	12/18/2015	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	759	$ 10,496.97	$ 6,747.51	$ 3,749.46
479529	Central	6/3/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	999	$ 12,967.02	$ 8,281.71	$ 4,685.31
479518	South	12/23/2018	885-305SN	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	37.55	315	$ 18,266.85	$ 11,828.25	$ 6,438.60
479529	Central	10/26/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	561	$ 7,281.78	$ 4,650.69	$ 2,631.09
479518	South	7/6/2017	Z115-128PC	Elements	Lindos	128" CC pull	12.98	8.46	268	$ 3,478.64	$ 2,267.28	$ 1,211.36
479518	South	3/10/2018	Z115-96SN	Elements	Lindos	96" CC pull	4.87	3.29	892	$ 4,344.04	$ 2,934.68	$ 1,409.36
480137	Central	2/22/2018	878AE	Elements	Kingsport	Knob	3.29	2.27	846	$ 2,783.34	$ 1,920.42	$ 862.92
478782	Central	4/10/2017	Z115-128SN	Elements	Lindos	128" CC pull	12.98	8.08	301	$ 3,906.98	$ 2,432.08	$ 1,474.90
478782	Central	9/26/2016	Z115-128SN	Elements	Lindos	128" CC pull	12.98	8.08	161	$ 2,089.78	$ 1,300.88	$ 788.90
477402	South	3/11/2016	885-224SN	Jeffrey Alexander	Hayworth	224 mm CC pull	24.4	14.22	698	$ 17,031.20	$ 9,925.56	$ 7,105.64
480137	Central	2/1/2016	878AE	Elements	Kingsport	Knob	3.29	2.27	612	$ 2,013.48	$ 1,389.24	$ 624.24
478406	Central	1/18/2018	Z115-96DBAC	Elements	Lindos	96" CC pull	4.87	3.1	566	$ 2,756.42	$ 1,754.60	$ 1,001.82
												684.99
												2,889.48
												2,145.12
												2,815.96
												511.02
												1,169.55
												1,050.90
												496.74
												613.20

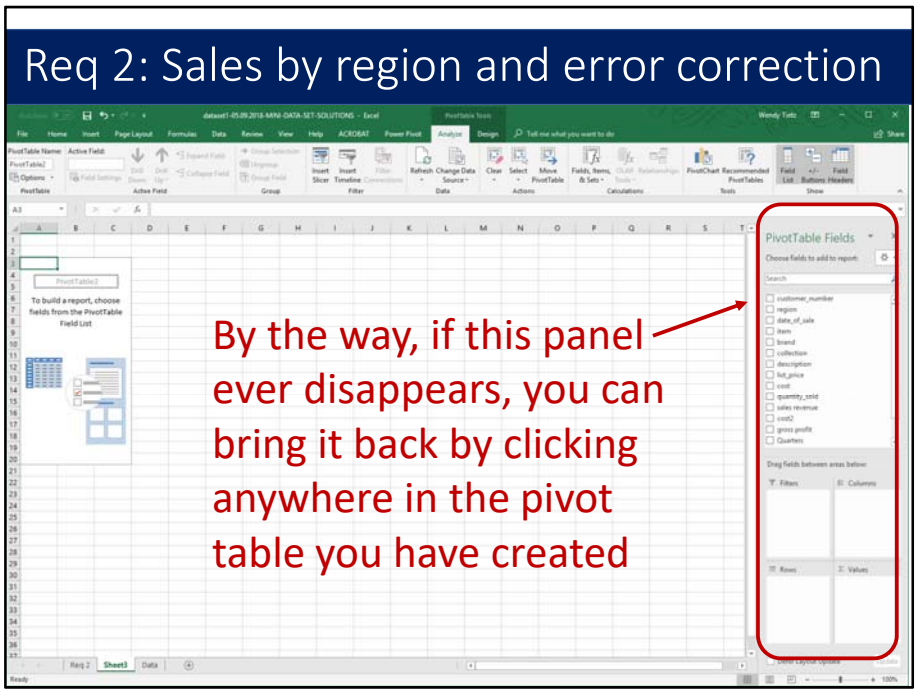
The first step is to click anywhere in the data in the Data worksheet.



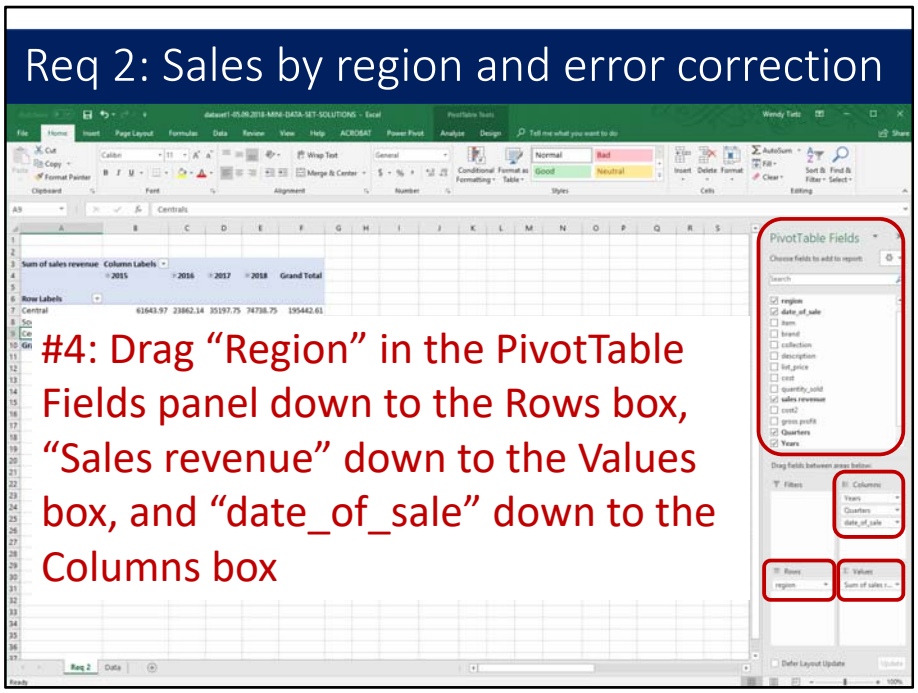
Next, on the ribbon, click Insert and then Pivot Table.



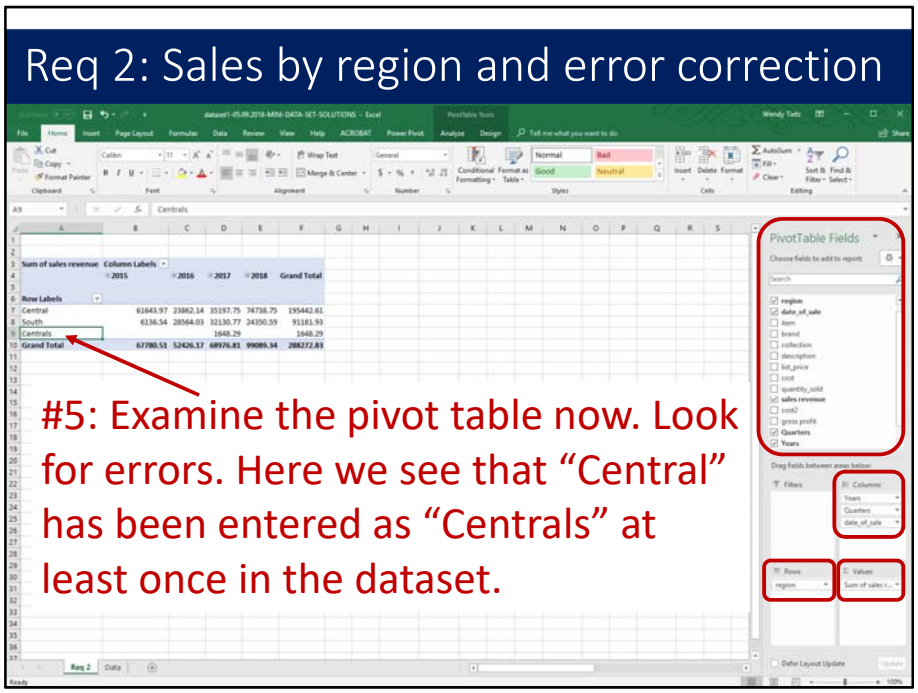
Before we go any further, right-click the worksheet name tab and rename it “Req 2.” That will help to keep track of the different pivot tables.



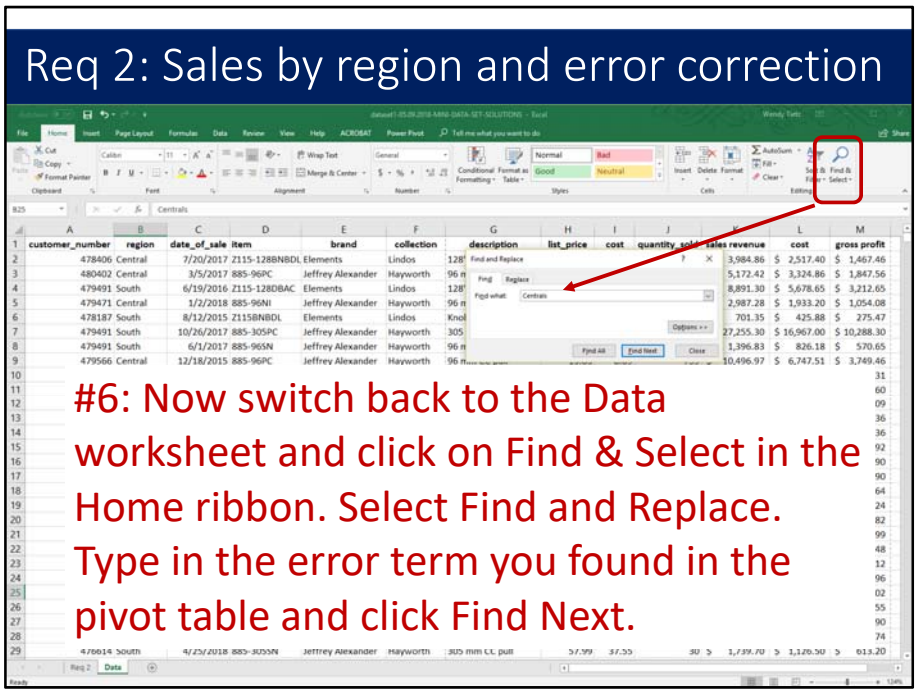
By the way, if the PivotTable Fields panel ever disappears, you can bring it back by clicking anywhere in the pivot table you have created.



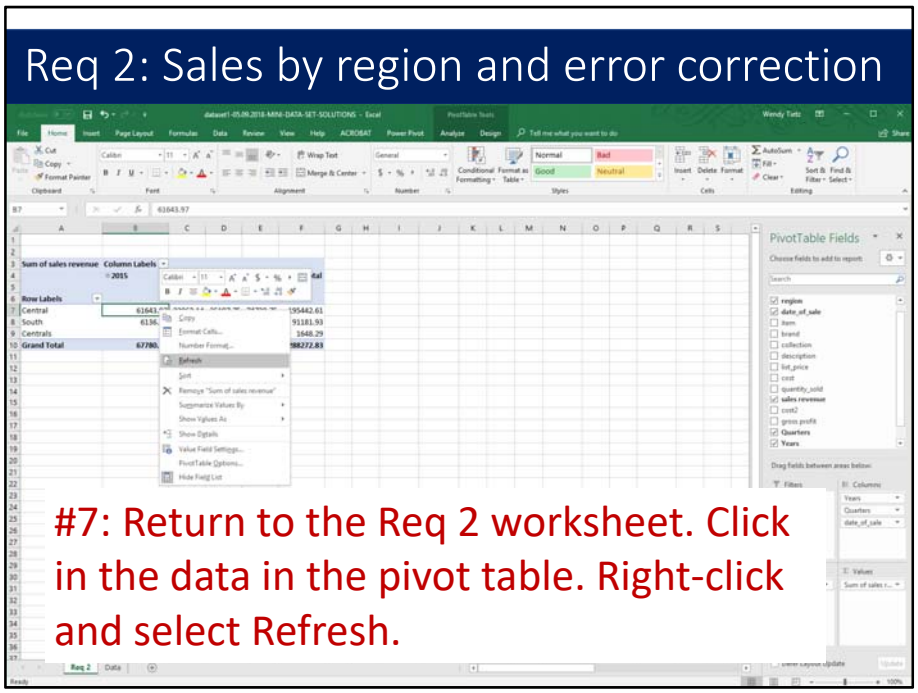
The next step is to drag “Region” in the PivotTable Fields panel down to the Rows box, “Sales revenue” down to the Values box, and “date_of_sale” down to the Columns box.



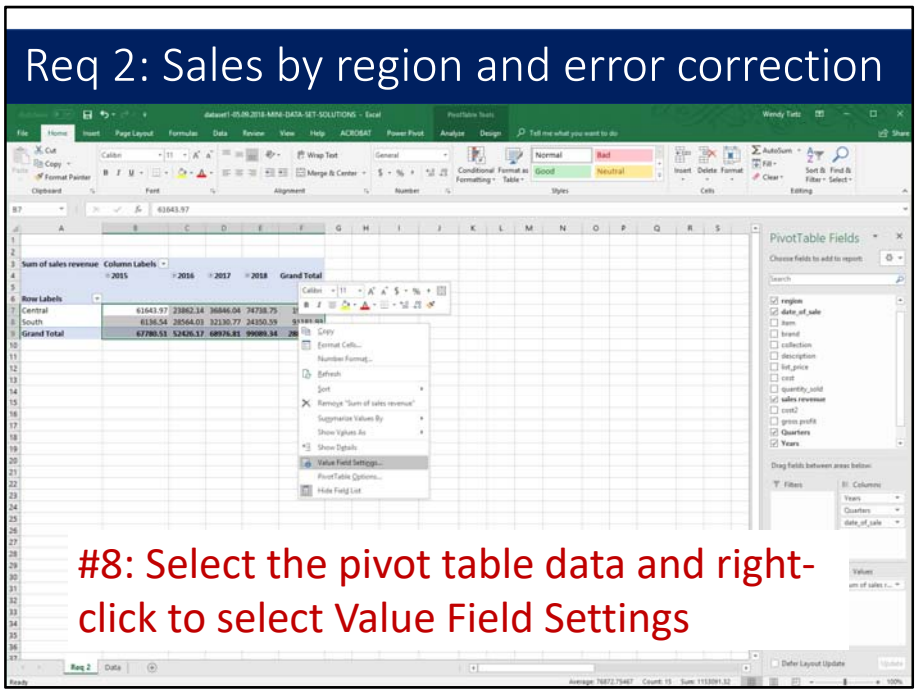
#5: Examine the pivot table now. Look for errors. Here we see that “Central” has been entered as “Centrals” at least once in the dataset. When you work on the large assigned dataset, there may be different error(s), but the same visual inspection technique will work to find any errors.



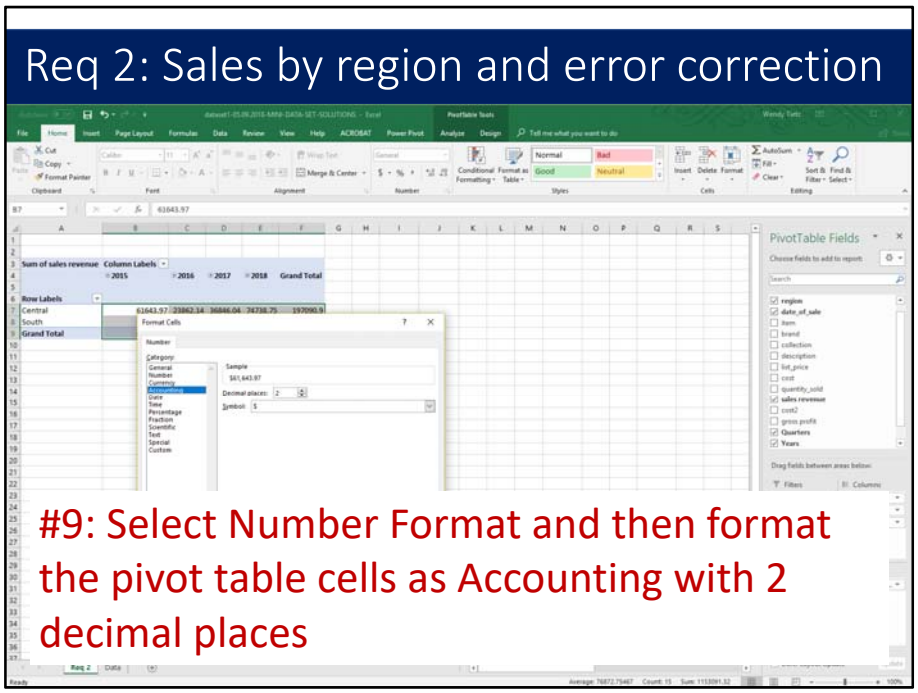
Now switch back to the Data worksheet and click on Find & Select in the Home ribbon. Select Find and Replace. Type in the error term(s) you found in the pivot table and click Find Next. Replace with the corrected spelling. Do this process for each error you find in the pivot table. Here we had just one, Centrals instead of the correct Central.



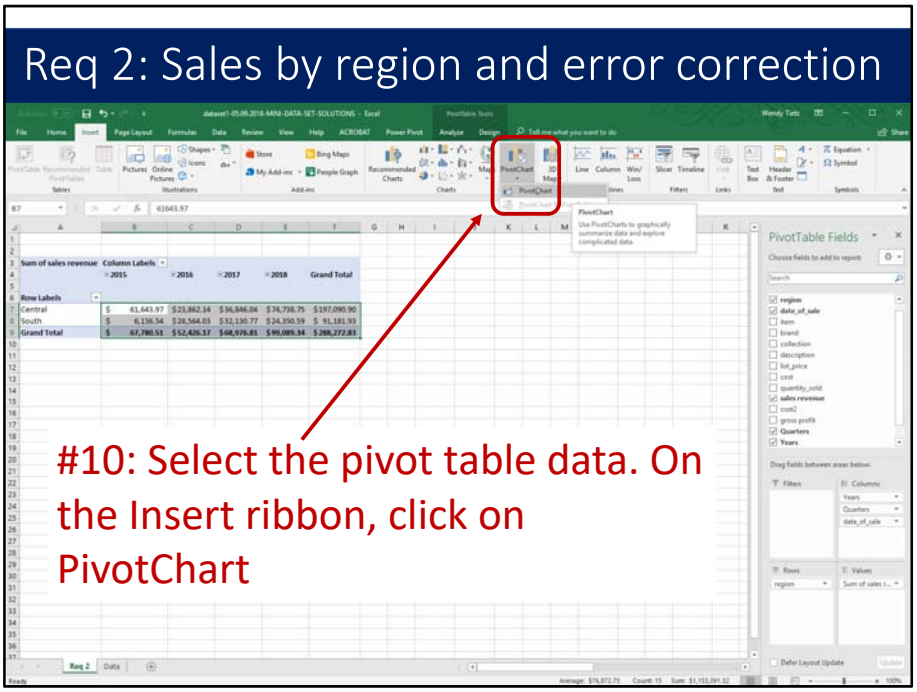
For Step 7, return to the Req 2 worksheet. Click in the data in the pivot table. Right-click and select Refresh. This process should update the pivot table so the errors you corrected are no longer in the pivot table.



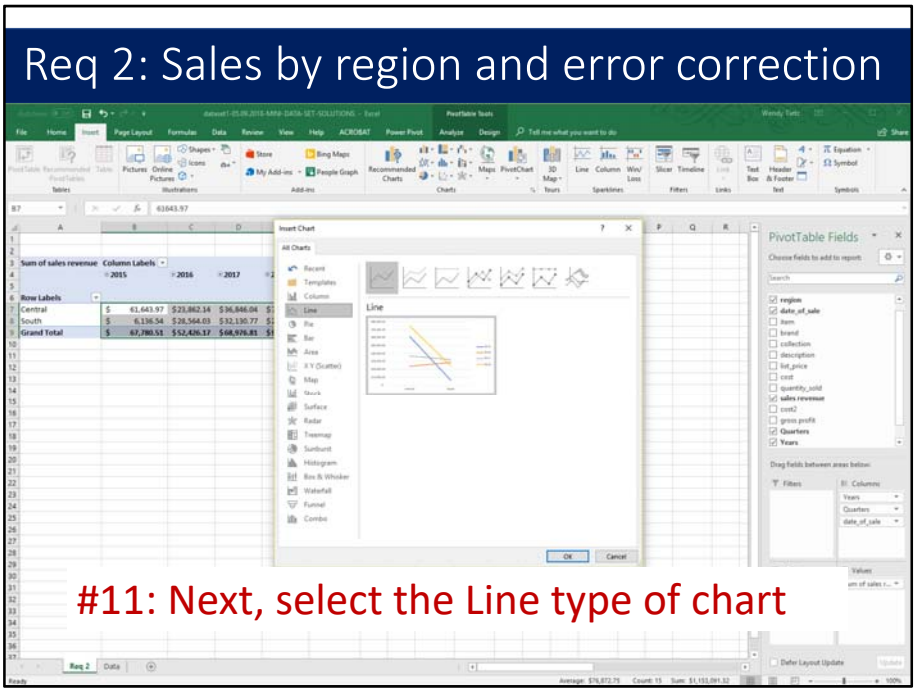
Next, we will format the data in the pivot table. Select the pivot table data and right-click to select Value Field Settings.



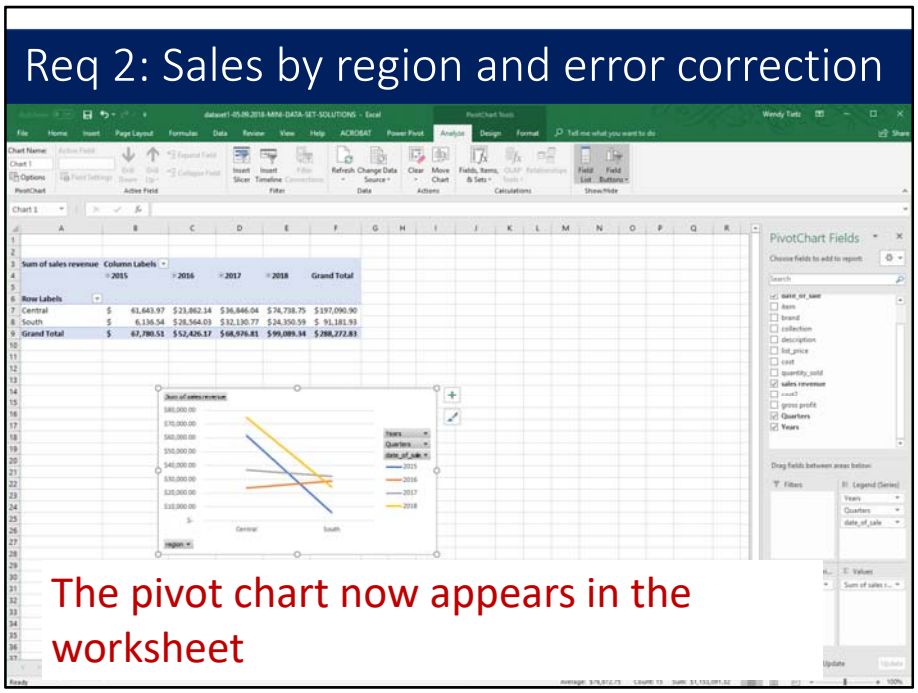
Select Number Format and then format the pivot table cells as Accounting with 2 decimal places.



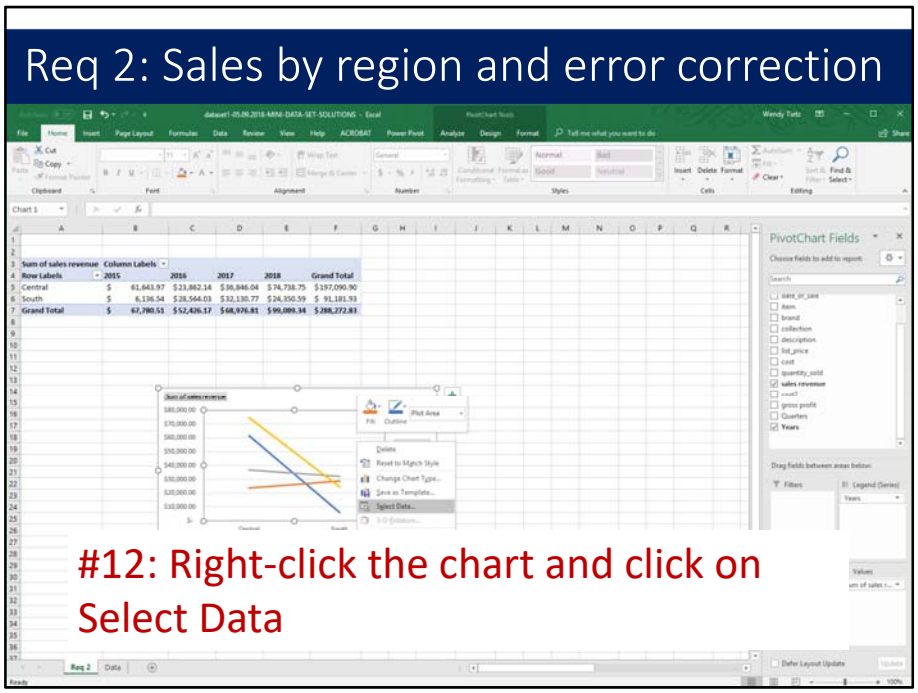
Now we are going to insert a PivotChart in this same worksheet. Select the pivot table data. On the Insert ribbon, click on PivotChart.



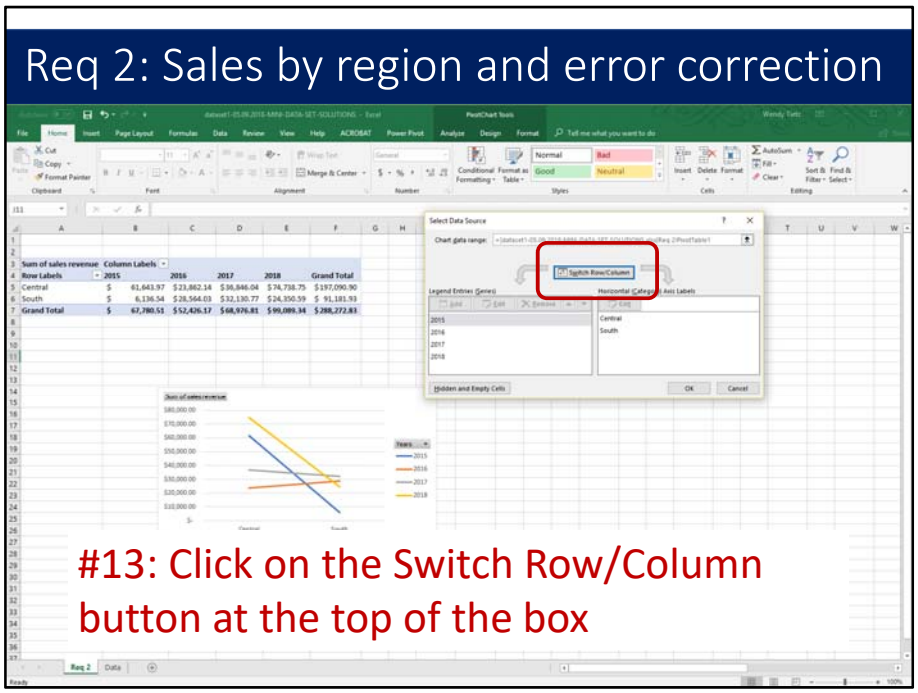
Next, select the Line type of chart and then click on OK.



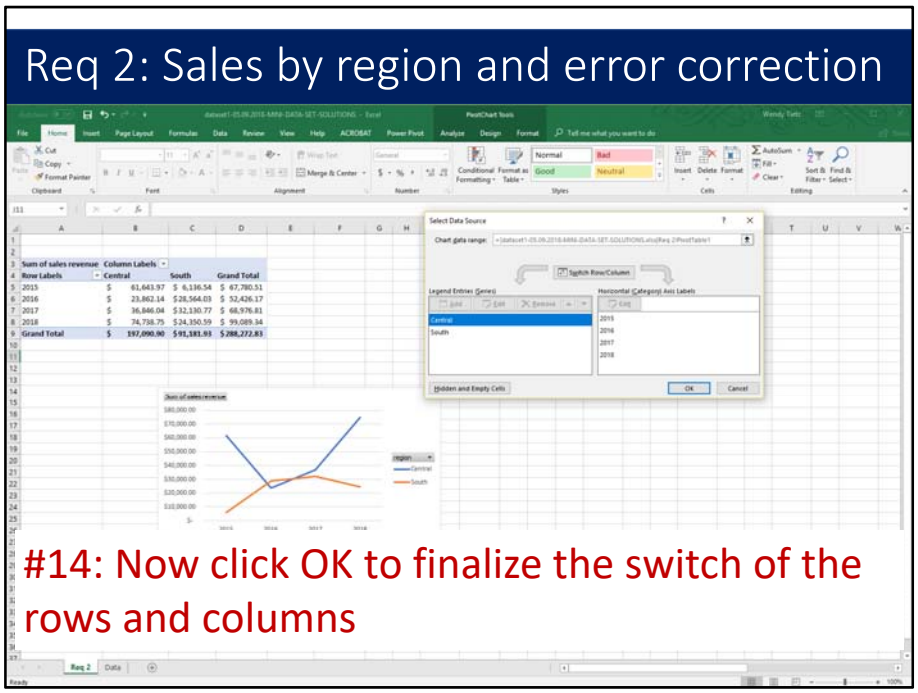
The pivot chart now appears in the worksheet. However, we need to switch the data rows and columns.



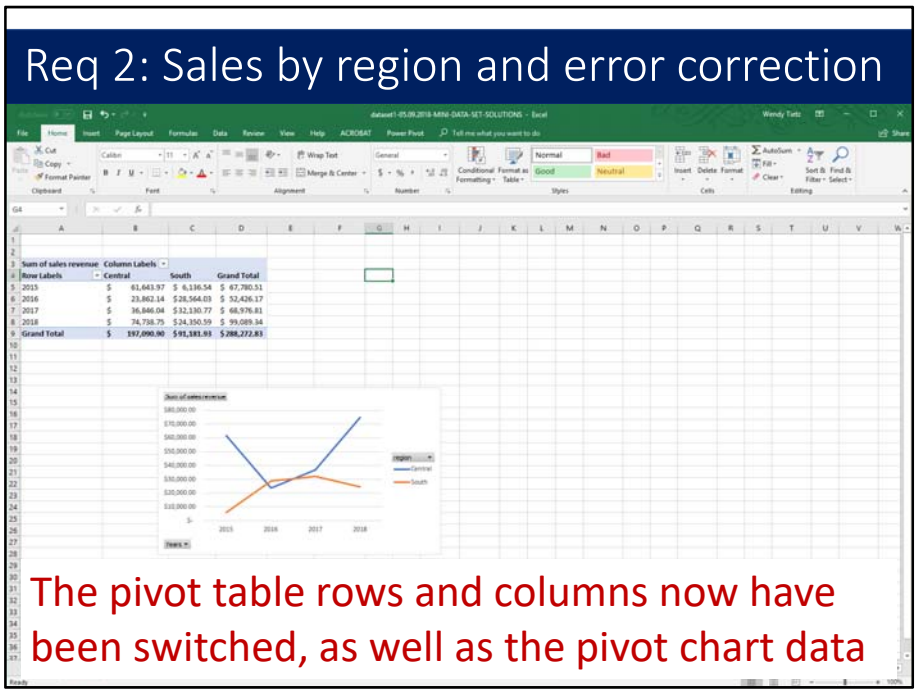
To switch the rows and columns, right-click the chart and click on Select Data.



Next, click on the Switch Row/Column button at the top of the box.



Now click OK to finalize the switch of the rows and columns.



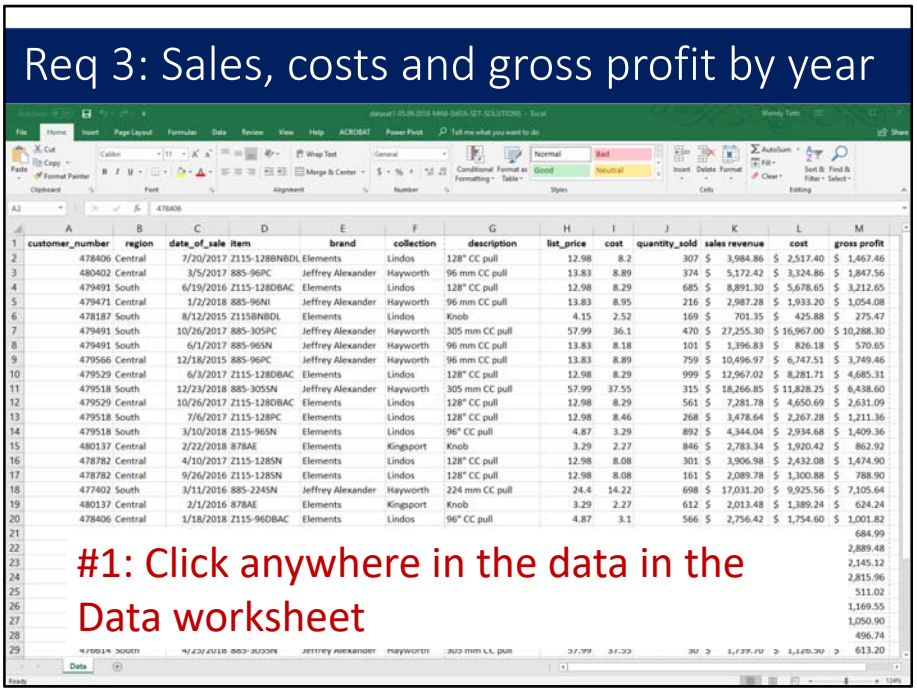
The pivot table rows and columns now have been switched, as well as the pivot chart data.

Requirement 3

Create a pivot table that shows sales revenue, costs, and gross profit for each year. What is the impact on retained earnings each year?

Requirement 3 reads “Create a pivot table that shows sales revenue, costs, and gross profit for each year. What is the impact on retained earnings each year?”

Req 3: Sales, costs and gross profit by year



customer_number	region	date_of_sale	item	brand	collection	description	list_price	cost	quantity_sold	sales revenue	cost	gross profit
478406	Central	7/20/2017	Z115-128BNBDL	Elements	Lindos	128" CC pull	12.98	8.2	307	$ 3,984.86	$ 2,517.40	$ 1,467.46
480402	Central	3/5/2017	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	374	$ 5,172.42	$ 3,324.86	$ 1,847.56
479491	South	6/19/2016	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	685	$ 8,891.30	$ 5,678.65	$ 3,212.65
479471	Central	1/2/2018	885-96NI	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.95	216	$ 2,987.28	$ 1,933.20	$ 1,054.08
478187	South	8/12/2015	Z115BNBDL	Elements	Lindos	Knob	4.15	2.52	169	$ 701.35	$ 425.88	$ 275.47
479491	South	10/26/2017	885-305PC	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	36.1	470	$ 27,255.30	$ 16,967.00	$ 10,288.30
479491	South	6/1/2017	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	101	$ 1,396.83	$ 826.18	$ 570.65
479566	Central	12/18/2015	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	759	$ 10,496.97	$ 6,747.51	$ 3,749.46
479529	Central	6/3/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	999	$ 12,967.02	$ 8,281.71	$ 4,685.31
479518	South	12/23/2018	885-305SN	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	37.55	315	$ 18,266.85	$ 11,828.25	$ 6,438.60
479529	Central	10/26/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	561	$ 7,281.78	$ 4,650.69	$ 2,631.09
479518	South	7/6/2017	Z115-128PC	Elements	Lindos	128" CC pull	12.98	8.46	268	$ 3,478.64	$ 2,267.28	$ 1,211.36
479518	South	3/10/2018	Z115-96SN	Elements	Lindos	96" CC pull	4.87	3.29	892	$ 4,344.04	$ 2,934.68	$ 1,409.36
480137	Central	2/22/2018	878AE	Elements	Kingsport	Knob	3.29	2.27	846	$ 2,783.34	$ 1,920.42	$ 862.92
478782	Central	4/10/2017	Z115-128SN	Elements	Lindos	128" CC pull	12.98	8.08	301	$ 3,906.98	$ 2,432.08	$ 1,474.90
478782	Central	9/26/2016	Z115-128SN	Elements	Lindos	128" CC pull	12.98	8.08	161	$ 2,089.78	$ 1,300.88	$ 788.90
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480137	Central	2/1/2016	878AE	Elements	Kingsport	Knob	3.29	2.27	612	$ 2,013.48	$ 1,389.24	$ 624.24
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												684.99
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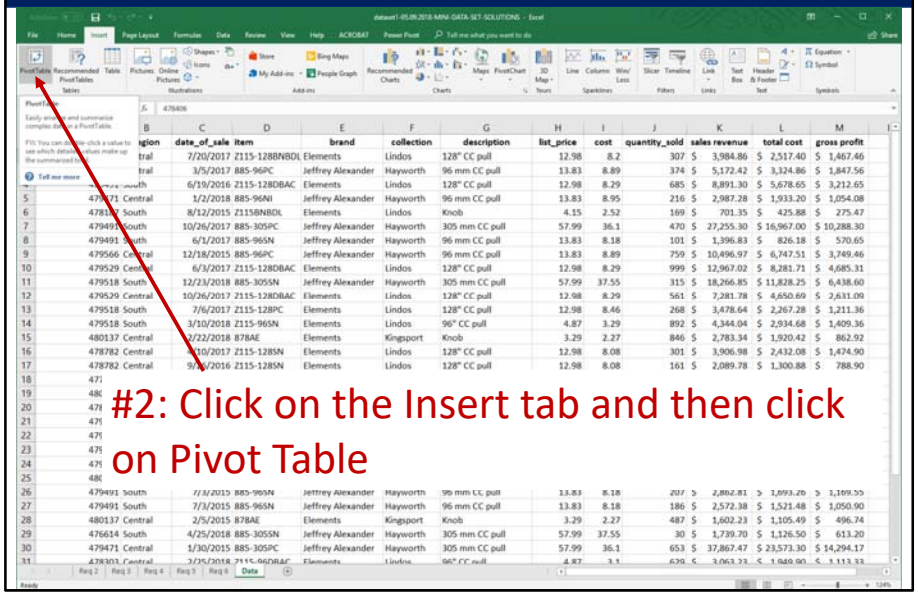
												2,145.12
												2,815.96
												511.02
												1,169.55
												1,050.90
												496.74
												613.20

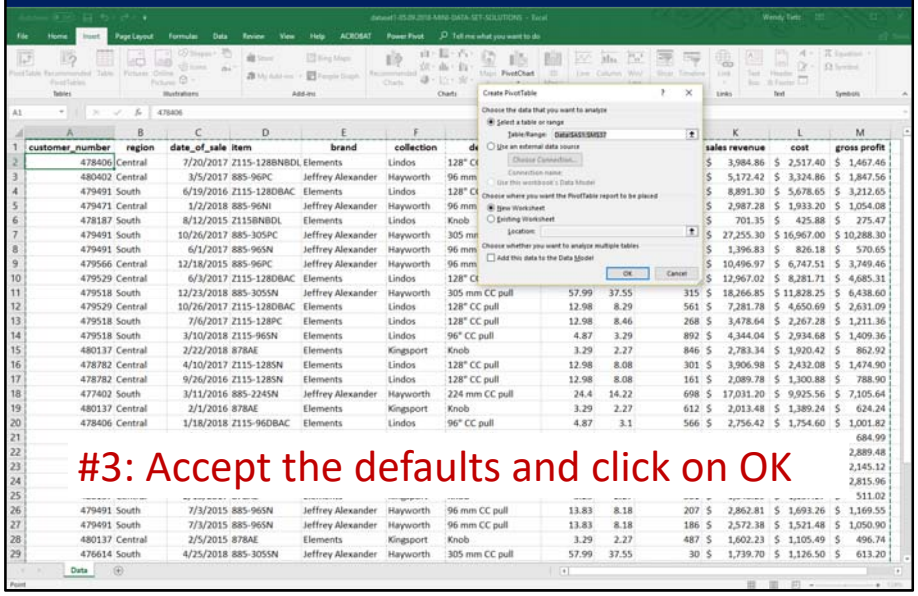
The first step is to click anywhere in the data in the Data worksheet.

Req 3: Sales, costs and gross profit by year

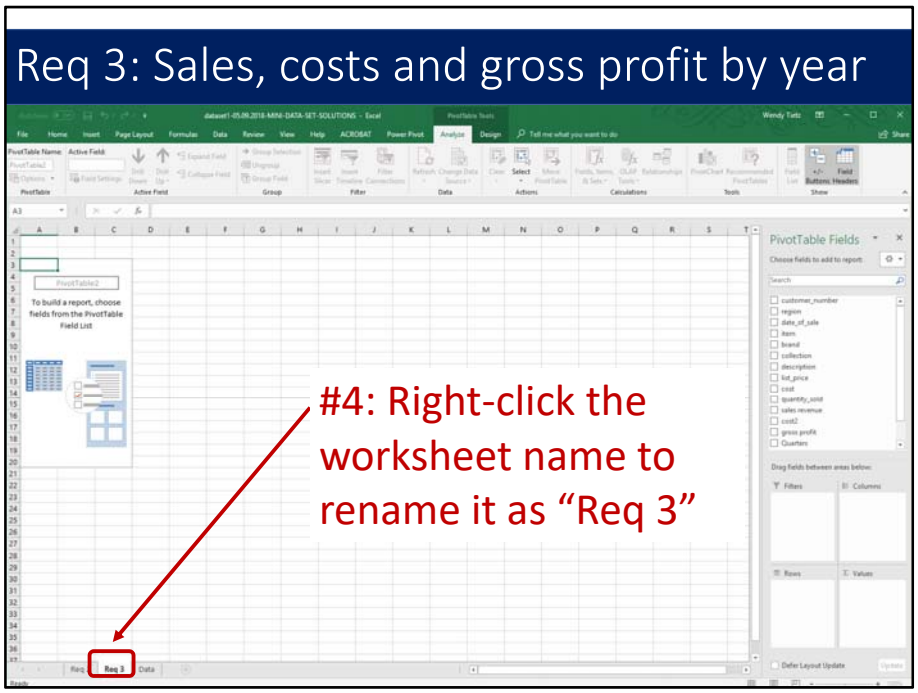


Click on the Insert tab and then click on Pivot Table.

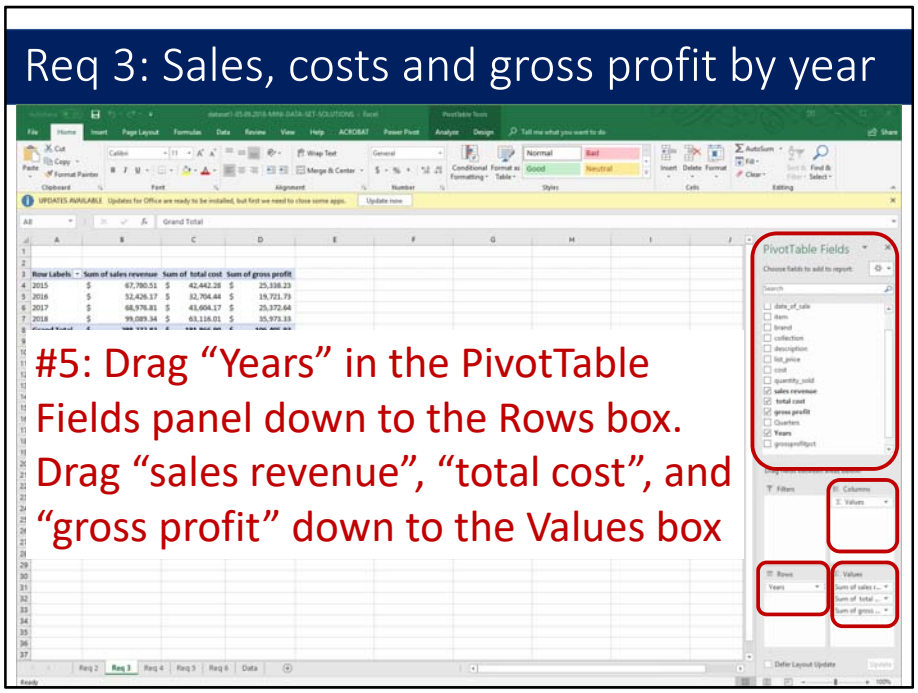
Req 3: Sales, costs and gross profit by year



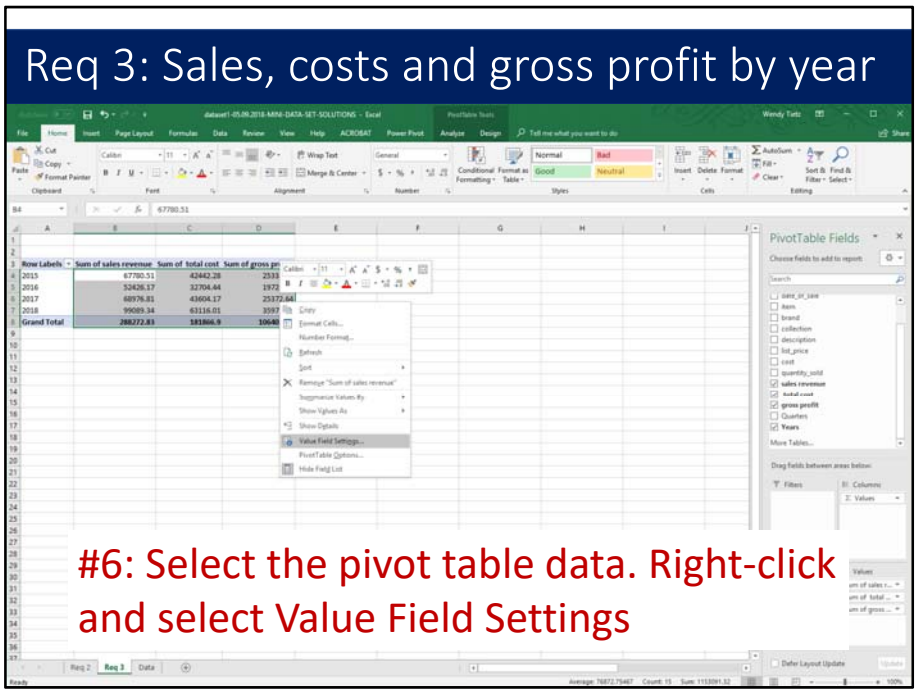
Next, accept the defaults and click on OK.



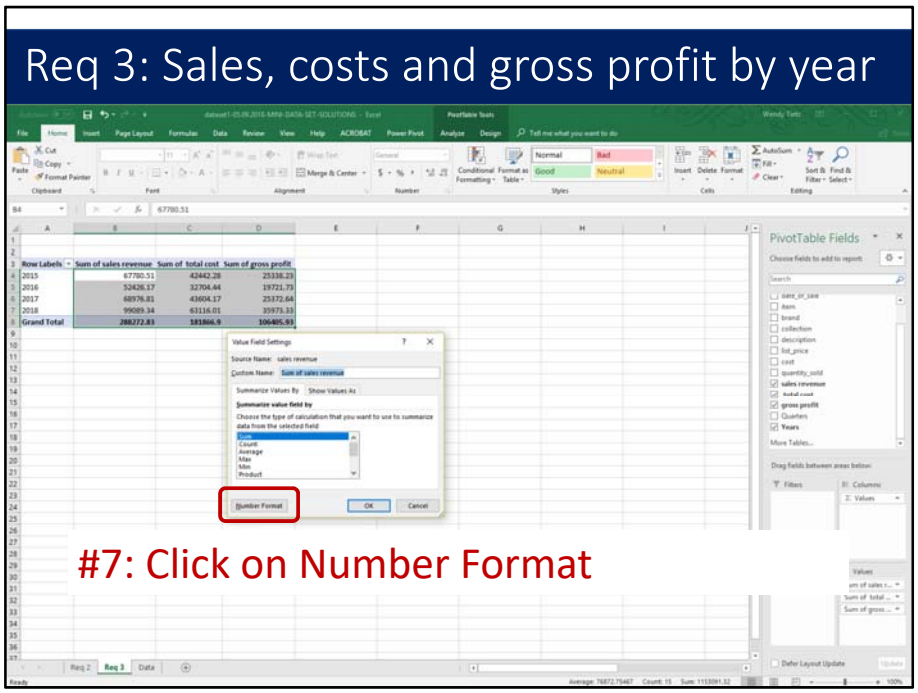
Before we go any further, right-click the worksheet name tab and rename it “Req 3.” That will just help to keep track of the various pivot tables.



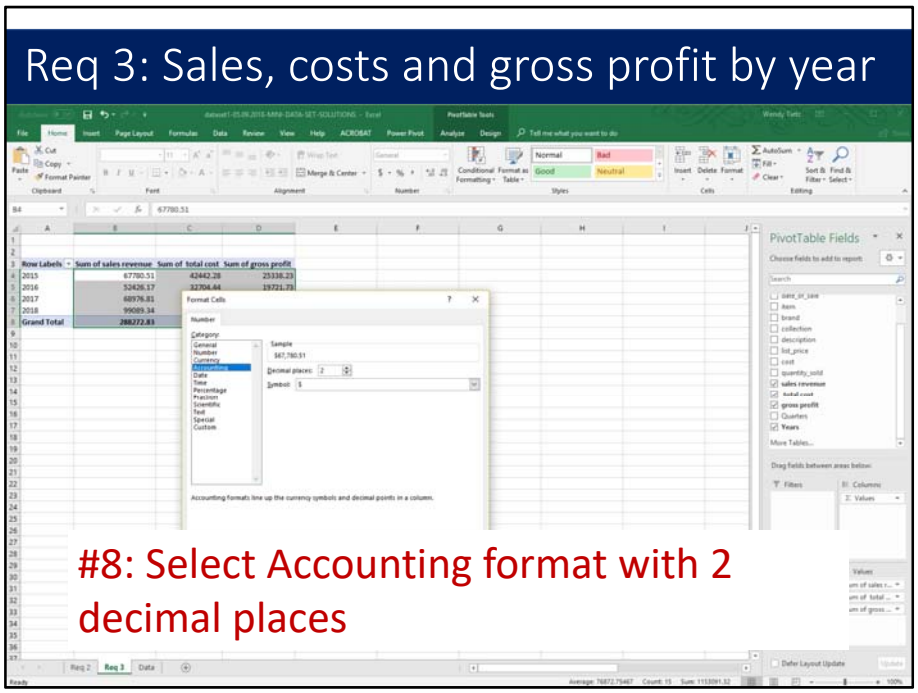
In the next step, drag “Years” in the PivotTable Fields panel down to the Rows box. Drag “sales revenue”, “total cost”, and “gross profit” down to the Values box.



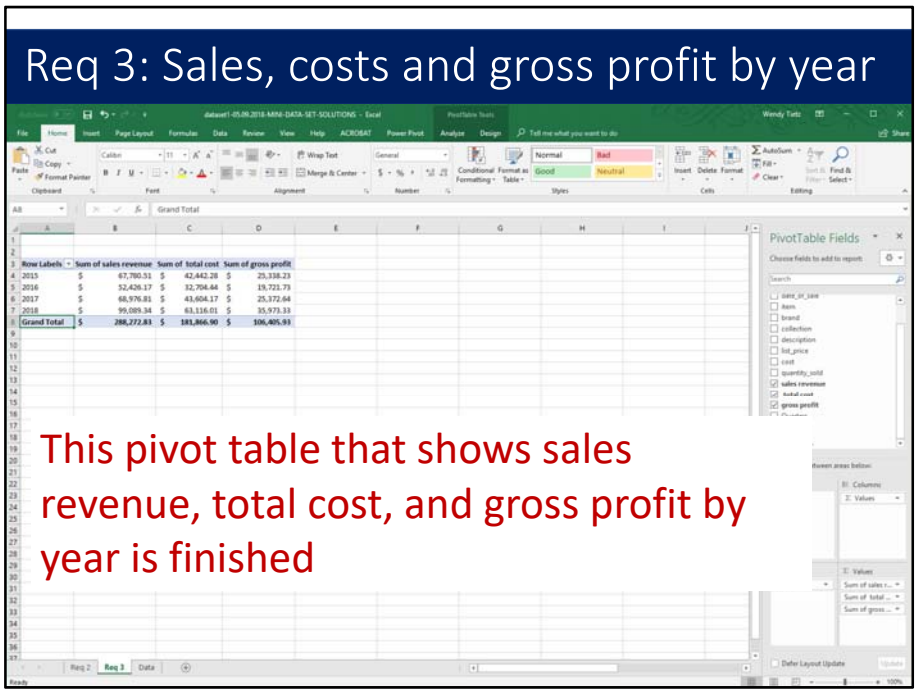
Next, select the pivot table data. Right-click and select Value Field Settings.



Next, click on Number Format.



Select Accounting format with 2 decimal places.



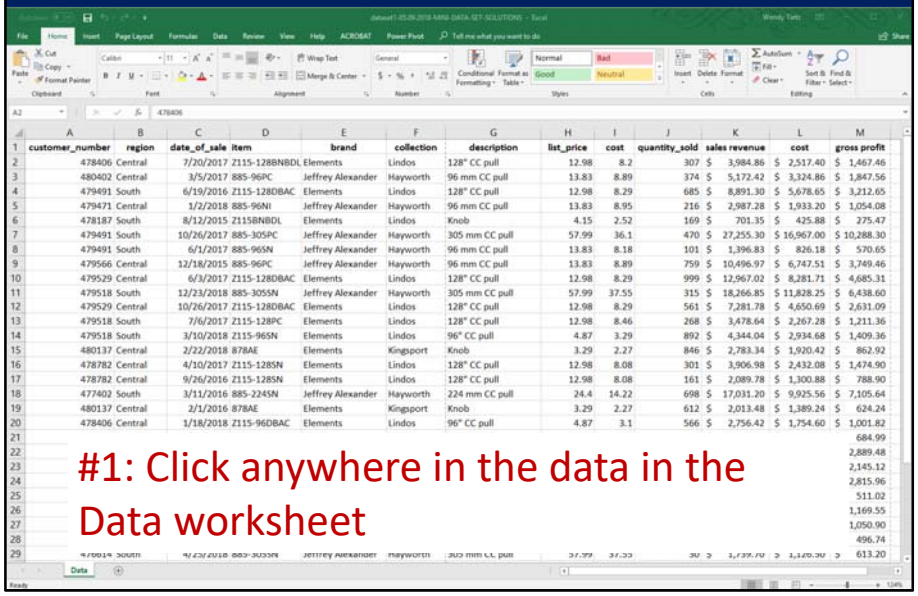
This pivot table that shows sales revenue, total cost, and gross profit by year is now finished. The requirements for the data project ask to calculate the net impact on retained earnings in each of the years from the transactions. Remember that gross profit will increase retained earnings.

Requirement 4

Create a pivot table that shows the most profitable brand in each year, as measured by gross profit.

Requirement 4 reads “Create a pivot table that shows the most profitable brand in each year, as measured by gross profit.”

Req 4: Most profitable by gross profit



customer_number	region	date_of_sale	item	brand	collection	description	list_price	cost	quantity_sold	sales revenue	cost	gross profit
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479491	South	6/19/2016	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	685	$ 8,891.30	$ 5,678.65	$ 3,212.65
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478187	South	8/12/2015	Z115BNBDL	Elements	Lindos	Knob	4.15	2.52	169	$ 701.35	$ 425.88	$ 275.47
479491	South	10/26/2017	885-305PC	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	36.1	470	$ 27,255.30	$ 16,967.00	$ 10,288.30
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479518	South	3/10/2018	Z115-96SN	Elements	Lindos	96" CC pull	4.87	3.29	892	$ 4,344.04	$ 2,934.68	$ 1,409.36
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478782	Central	9/26/2016	Z115-128SN	Elements	Lindos	128" CC pull	12.98	8.08	161	$ 2,089.78	$ 1,300.88	$ 788.90
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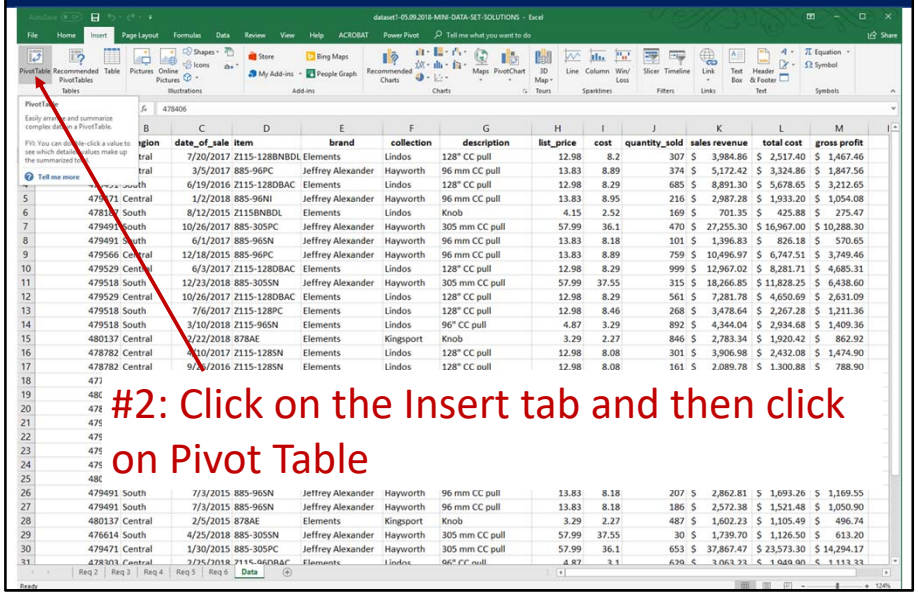
												2,145.12
												2,815.96
												511.02
												1,169.55
												1,050.90
												496.74
												613.20

#1: Click anywhere in the data in the Data worksheet

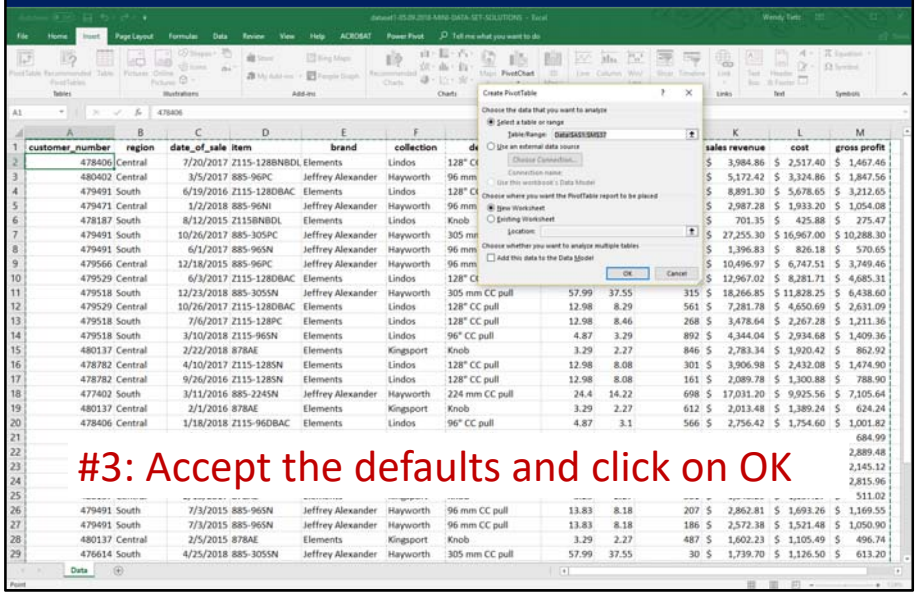
The first step is to click anywhere in the data in the Data worksheet.

Req 4: Most profitable by gross profit

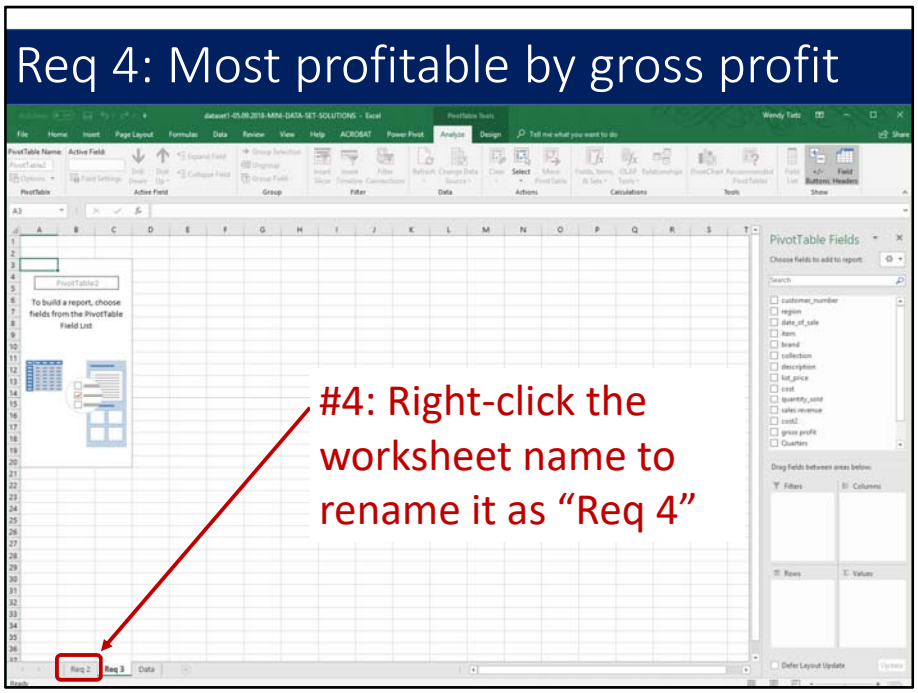


Click on the Insert tab and then click on Pivot Table.

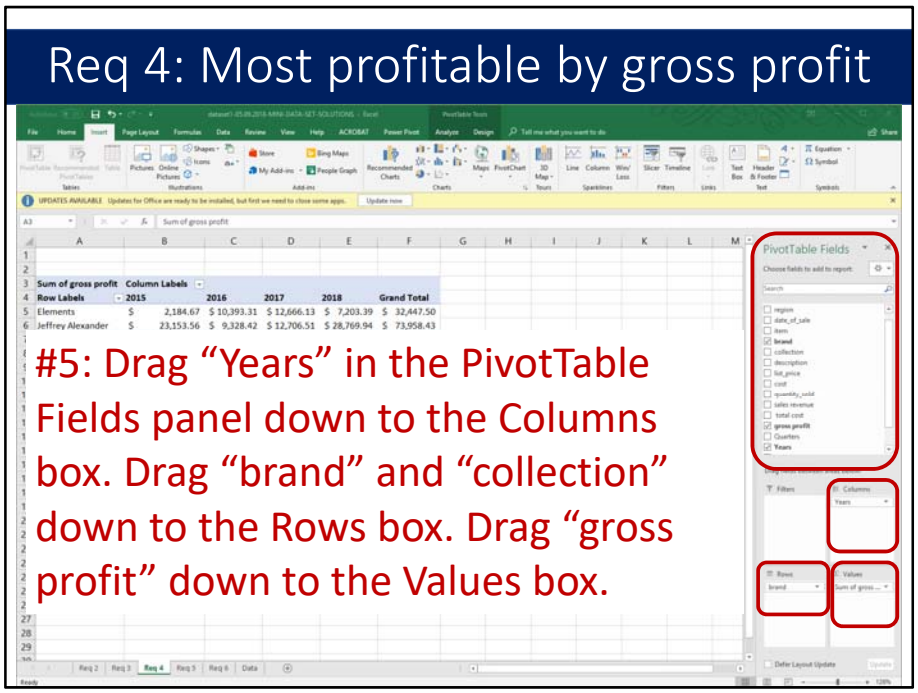
Req 4: Most profitable by gross profit



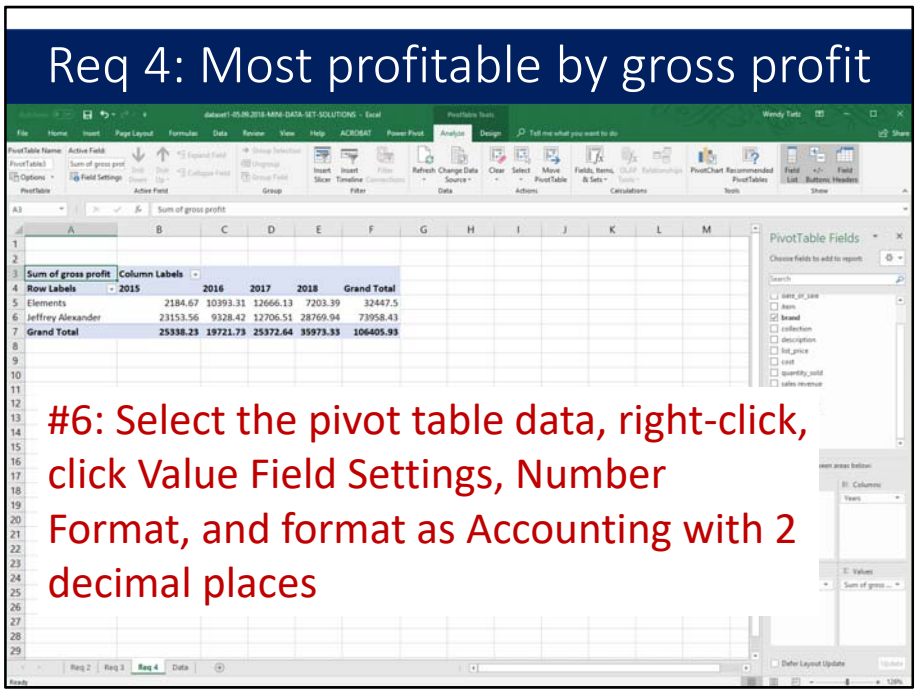
Accept the defaults and click on OK.



Before we go any further, right-click the worksheet name tab and rename it “Req 4.” That will help to keep track of the pivot tables.

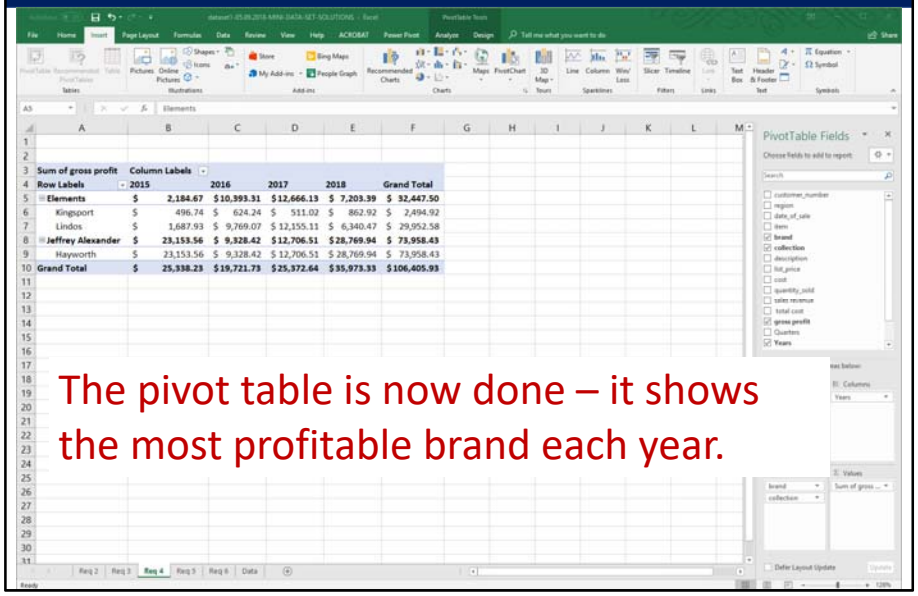


In the next step, drag “Years” in the PivotTable Fields panel down to the Columns box. Drag “brand” and “collection” down to the Rows box. Drag “gross profit” down to the Values box.



Next, select the pivot table data, right-click, click Value Field Settings, Number Format, and format as Accounting with 2 decimal places.

Req 4: Most profitable by gross profit

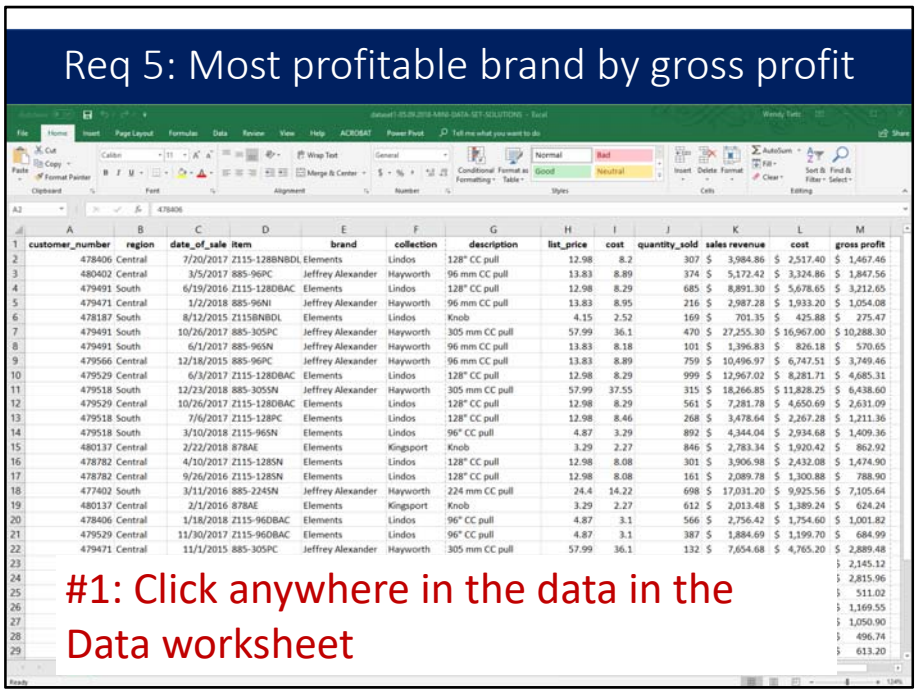


The pivot table is now done – it shows the most profitable brand each year.

Requirement 5

Create a pivot table to answer the question “Within each brand, what was the most profitable brand in each year, as measured by gross profit?”

Requirement 5 reads ““Within each brand, what was the most profitable collection in 2018, as measured by the gross profit percentage? The least most profitable collection for each brand?” Use the field “years” to filter the data to include just the year of 2018. You will need to add a calculated field to the pivot table to calculate the gross profit percentage. Within each brand, sort the collections by gross profit percentage, from the largest to the smallest. Interpret your findings.”



customer_number	region	date_of_sale	item	brand	collection	description	list_price	cost	quantity_sold	sales revenue	cost	gross profit
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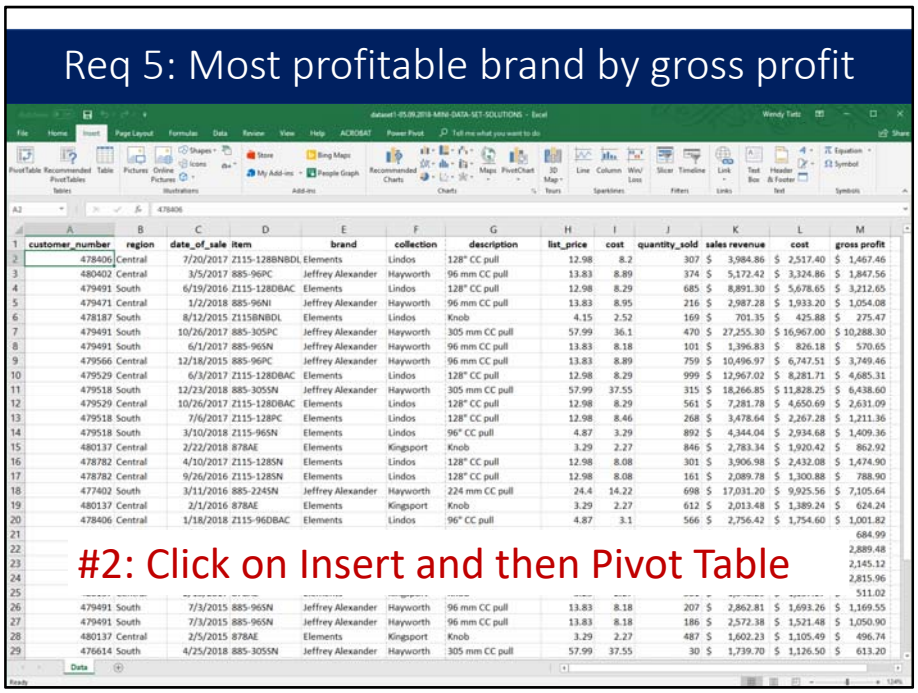
479491	South	10/26/2017	885-305PC	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	36.1	470	$ 27,255.30	$ 16,967.00	$ 10,288.30
479491	South	6/1/2017	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	101	$ 1,396.83	$ 826.18	$ 570.65
479566	Central	12/18/2015	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	759	$ 10,496.97	$ 6,747.51	$ 3,749.46
479529	Central	6/3/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	999	$ 12,967.02	$ 8,281.71	$ 4,685.31
479518	South	12/23/2018	885-305SN	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	37.55	315	$ 18,266.85	$ 11,828.25	$ 6,438.60
479529	Central	10/26/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	561	$ 7,281.78	$ 4,650.69	$ 2,631.09
479518	South	7/6/2017	Z115-128PC	Elements	Lindos	128" CC pull	12.98	8.46	268	$ 3,478.64	$ 2,267.28	$ 1,211.36
479518	South	3/10/2018	Z115-96SN	Elements	Lindos	96" CC pull	4.87	3.29	892	$ 4,344.04	$ 2,934.68	$ 1,409.36
480137	Central	2/22/2018	878AE	Elements	Kingsport	Knob	3.29	2.27	846	$ 2,783.34	$ 1,920.42	$ 862.92
478782	Central	4/10/2017	Z115-128SN	Elements	Lindos	128" CC pull	12.98	8.08	301	$ 3,906.98	$ 2,432.08	$ 1,474.90
478782	Central	9/26/2016	Z115-128SN	Elements	Lindos	128" CC pull	12.98	8.08	161	$ 2,089.78	$ 1,300.88	$ 788.90
477402	South	3/11/2016	885-224SN	Jeffrey Alexander	Hayworth	224 mm CC pull	24.4	14.22	698	$ 17,031.20	$ 9,925.56	$ 7,105.64
480137	Central	2/1/2016	878AE	Elements	Kingsport	Knob	3.29	2.27	612	$ 2,013.48	$ 1,389.24	$ 624.24
478406	Central	1/18/2018	Z115-96DBAC	Elements	Lindos	96" CC pull	4.87	3.1	566	$ 2,756.42	$ 1,754.60	$ 1,001.82
479529	Central	11/30/2017	Z115-96DBAC	Elements	Lindos	96" CC pull	4.87	3.1	387	$ 1,884.69	$ 1,199.70	$ 684.99
479471	Central	11/1/2015	885-305PC	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	36.1	132	$ 7,654.68	$ 4,765.20	$ 2,889.48
												$ 2,145.12
												$ 2,815.96
												$ 511.02
												$ 1,169.55
												$ 1,050.90
												$ 496.74
												$ 613.20

The first step is to click anywhere in the data in the Data worksheet.

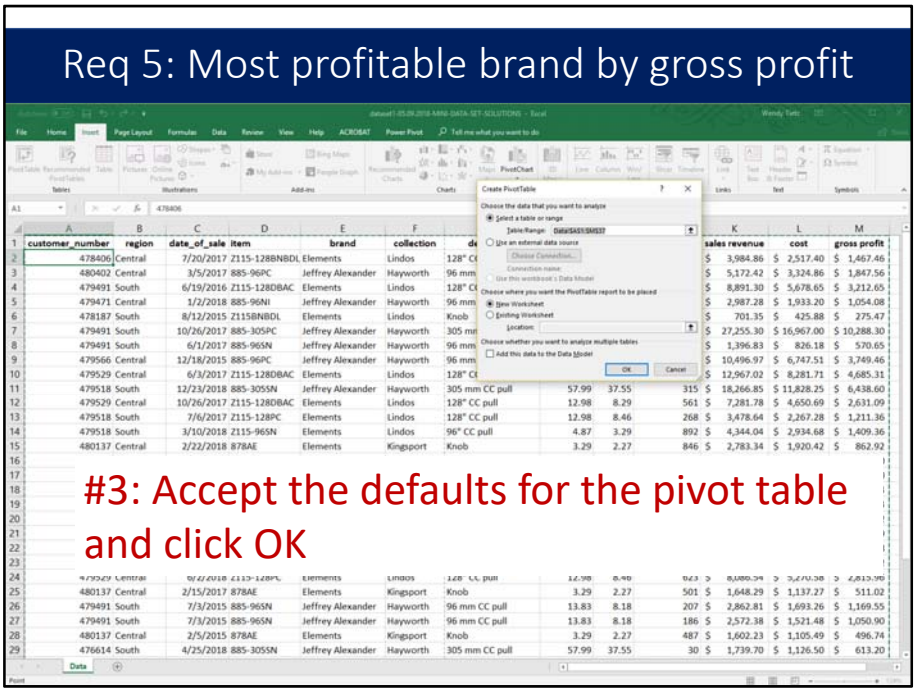
Req 5: Most profitable brand by gross profit



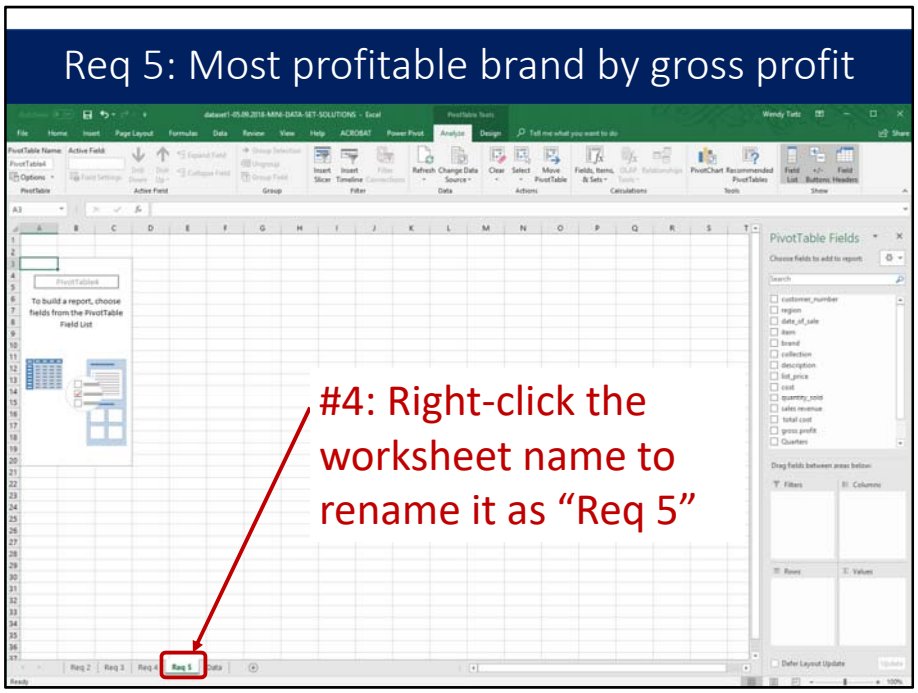
customer_number	region	date_of_sale	item	brand	collection	description	list_price	cost	quantity_sold	sales revenue	cost	gross profit
478406	Central	7/20/2017	Z115-128BNBDL	Elements	Lindos	128" CC pull	12.98	8.2	307	$ 3,984.86	$ 2,517.40	$ 1,467.46
480402	Central	3/5/2017	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	374	$ 5,172.42	$ 3,324.86	$ 1,847.56
479491	South	6/19/2016	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	685	$ 8,891.30	$ 5,678.65	$ 3,212.65
479471	Central	1/2/2018	885-96NI	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.95	216	$ 2,987.28	$ 1,933.20	$ 1,054.08
478187	South	8/12/2015	Z115BNBDL	Elements	Lindos	Knob	4.15	2.52	169	$ 701.35	$ 425.88	$ 275.47
479491	South	10/26/2017	885-30SPC	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	36.1	470	$ 27,255.30	$ 16,967.00	$ 10,288.30
479491	South	6/1/2017	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	101	$ 1,396.83	$ 826.18	$ 570.65
479566	Central	12/18/2015	885-96PC	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.89	759	$ 10,496.97	$ 6,747.51	$ 3,749.46
479529	Central	6/3/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	999	$ 12,967.02	$ 8,281.71	$ 4,685.31
479518	South	12/23/2018	885-30SSN	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	37.55	315	$ 18,266.85	$ 11,828.25	$ 6,438.60
479529	Central	10/26/2017	Z115-128DBAC	Elements	Lindos	128" CC pull	12.98	8.29	561	$ 7,281.78	$ 4,650.69	$ 2,631.09
479518	South	7/6/2017	Z115-128PC	Elements	Lindos	128" CC pull	12.98	8.46	268	$ 3,478.64	$ 2,267.28	$ 1,211.36
479518	South	3/10/2018	Z115-96SN	Elements	Lindos	96" CC pull	4.87	3.29	892	$ 4,344.04	$ 2,934.68	$ 1,409.36
480137	Central	2/22/2018	878AE	Elements	Kingsport	Knob	3.29	2.27	846	$ 2,783.34	$ 1,920.42	$ 862.92
478782	Central	4/10/2017	Z115-128SN	Elements	Lindos	128" CC pull	12.98	8.08	301	$ 3,906.98	$ 2,432.08	$ 1,474.90
478782	Central	9/26/2016	Z115-128SN	Elements	Lindos	128" CC pull	12.98	8.08	161	$ 2,089.78	$ 1,300.88	$ 788.90
477402	South	3/11/2016	885-224SN	Jeffrey Alexander	Hayworth	224 mm CC pull	24.4	14.22	698	$ 17,031.20	$ 9,925.56	$ 7,105.64
480137	Central	2/1/2016	878AE	Elements	Kingsport	Knob	3.29	2.27	612	$ 2,013.48	$ 1,389.24	$ 624.24
478406	Central	1/18/2018	Z115-96DBAC	Elements	Lindos	96" CC pull	4.87	3.1	566	$ 2,756.42	$ 1,754.60	$ 1,001.82
												684.99
												2,889.48
												2,145.12
												2,815.96
												511.02
479491	South	7/3/2015	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	207	$ 2,862.81	$ 1,693.26	$ 1,169.55
479491	South	7/3/2015	885-96SN	Jeffrey Alexander	Hayworth	96 mm CC pull	13.83	8.18	186	$ 2,572.38	$ 1,521.48	$ 1,050.90
480137	Central	2/5/2015	878AE	Elements	Kingsport	Knob	3.29	2.27	487	$ 1,602.23	$ 1,105.49	$ 496.74
476614	South	4/25/2018	885-30SSN	Jeffrey Alexander	Hayworth	305 mm CC pull	57.99	37.55	30	$ 1,739.70	$ 1,126.50	$ 613.20

#2: Click on Insert and then Pivot Table

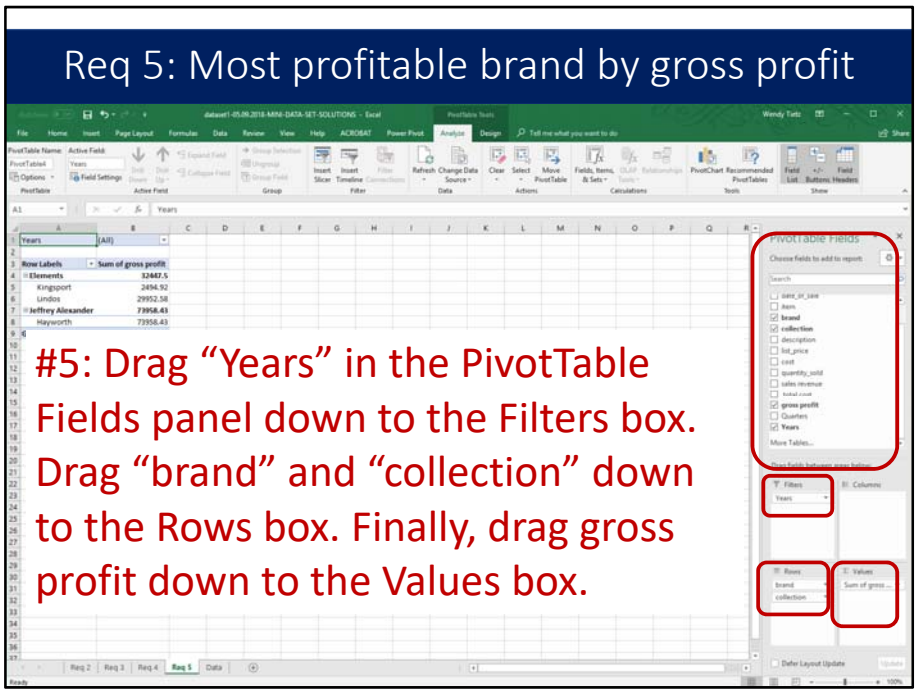
Next, click on Insert and then Pivot Table.



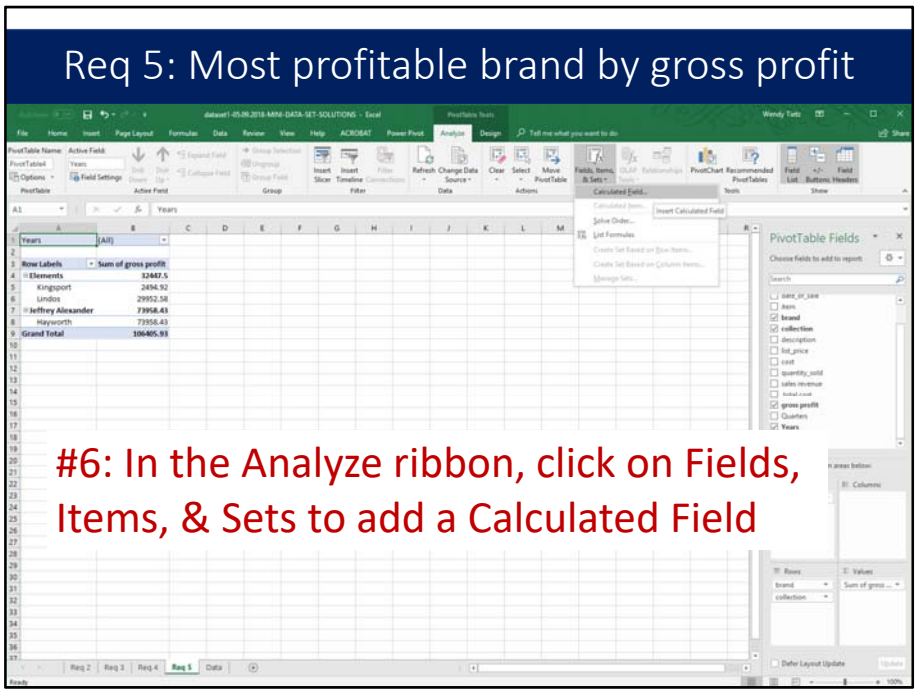
Next, accept the defaults for the pivot table and click OK.



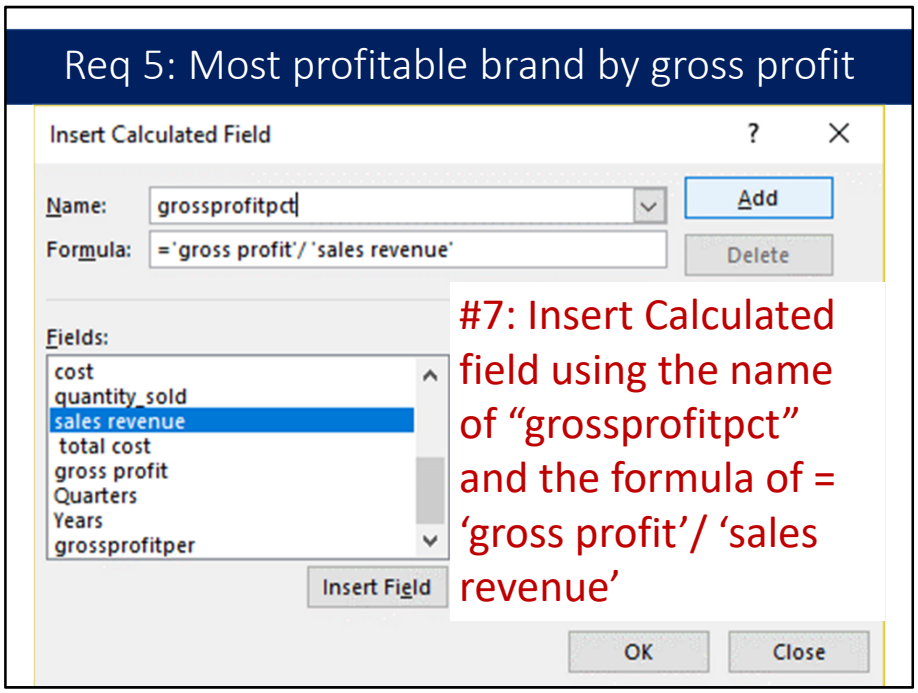
Before we go any further, right-click the worksheet name tab and rename it “Req 5.” Numbering the worksheets helps to keep track of the pivot tables.



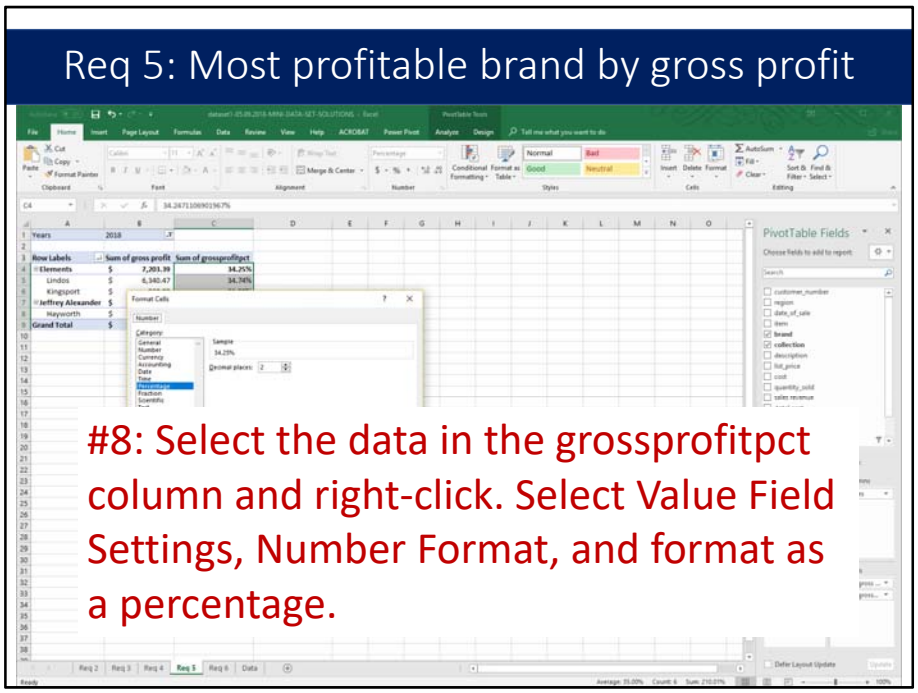
Next, drag “Years” in the PivotTable Fields panel down to the Filters box. Drag “brand” and “collection” down to the Rows box. Finally, drag gross profit down to the Values box.



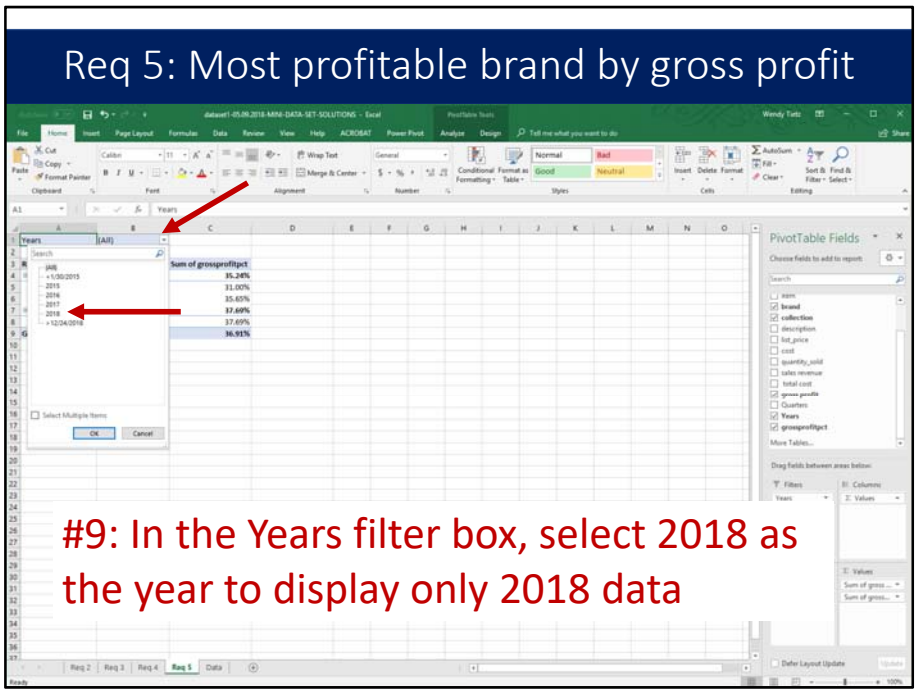
Next, in the Analyze ribbon, click on Fields, Items, & Sets to add a Calculated Field.



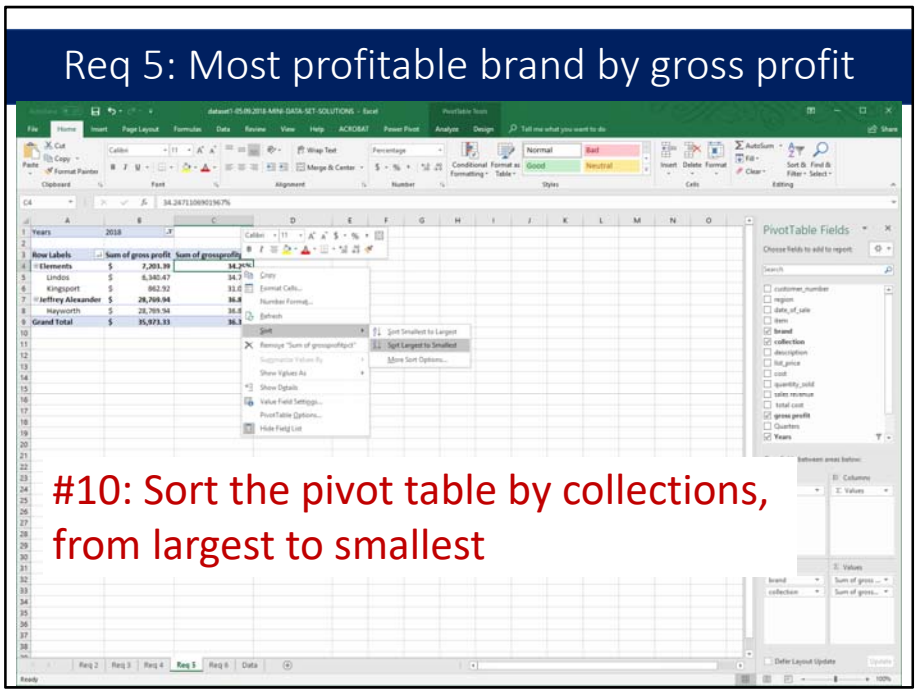
For the next step, insert Calculated field using the name of “grossprofitpct” and the formula of = ‘gross profit’/ ‘sales revenue’. Point to the fields and click insert rather than typing them in.



Next, select the data in the grossprofitpct column and right-click. Select Value Field Settings, Number Format, and format as a percentage.

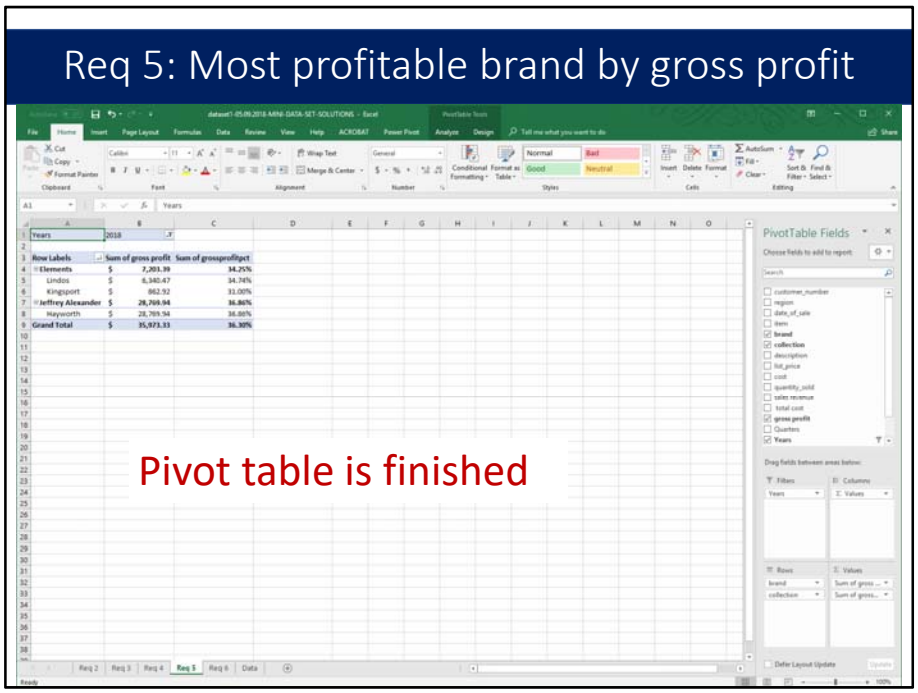


In the next step, in the Years filter box, select 2018 as the year to display only 2018 data.



Click on a cell in the pivot table at the collection level. Here we will click on Cell C5. Next, right-click and select Sort, and then Sort Largest to Smallest.

Req 5: Most profitable brand by gross profit

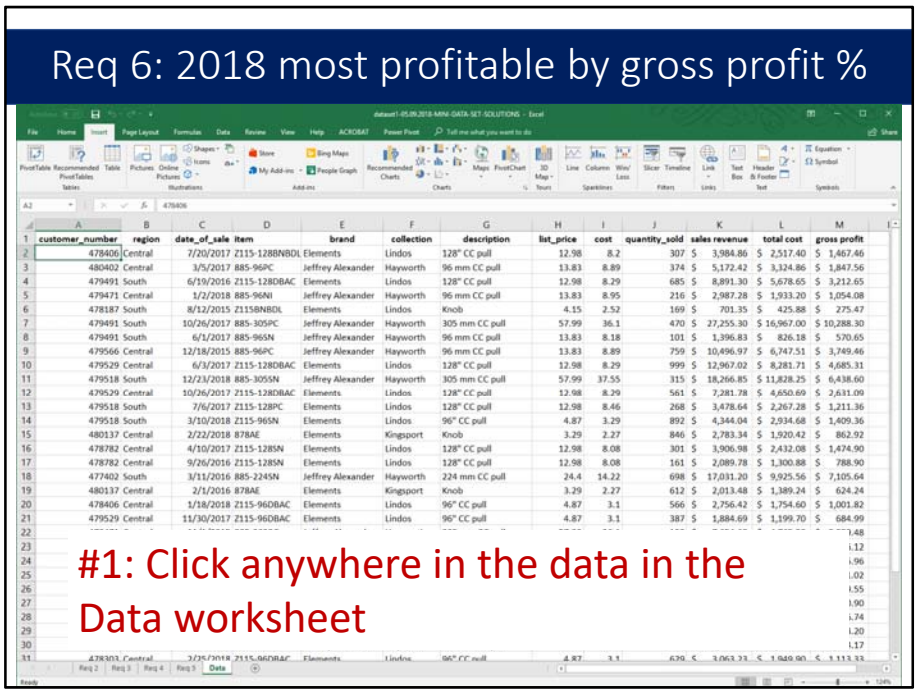


The pivot table is finished. We can see the most profitable and least profitable brands as measured by gross profit dollars.

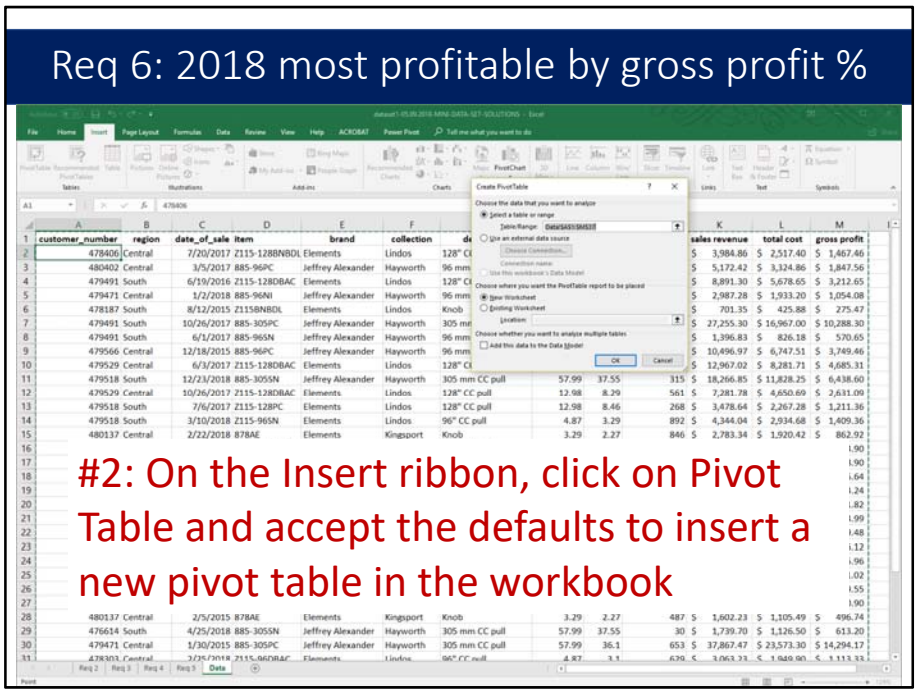
Requirement 6

Create a pivot table to answer the question “Which region was the most profitable in 2018, as measured by the gross profit percentage?”

Requirement 6 reads “Create a pivot table to answer the question “Which region was the most profitable in 2018, as measured by the gross profit percentage?” Use a filter to include only sales from 2018 in this pivot table. Again, you will need to add a calculated field to the pivot table to calculate the gross profit percentage. Sort the regions by gross profit percentage, from largest to smallest.”

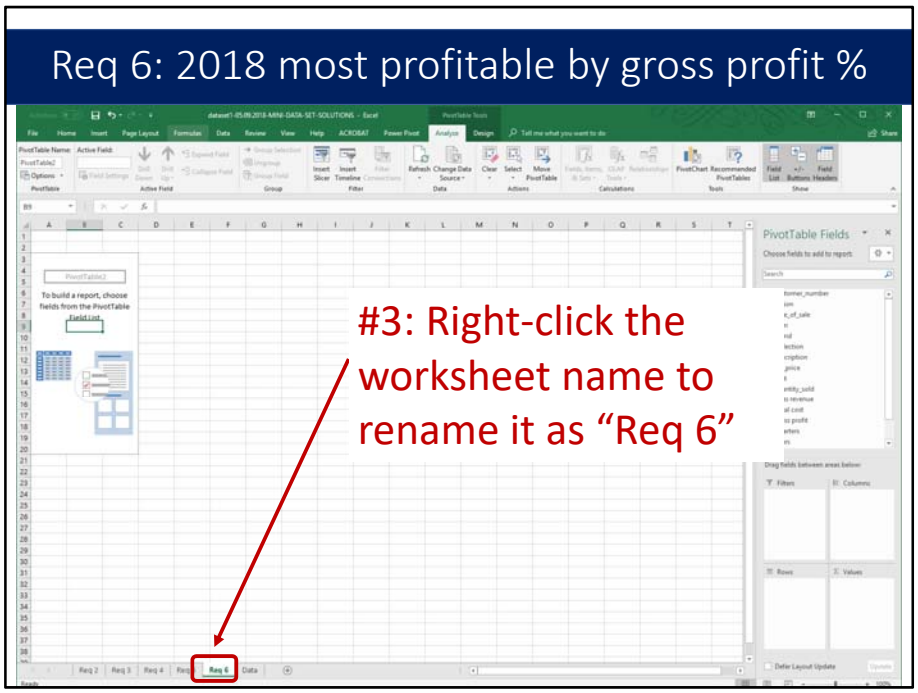


The first step is to click anywhere in the data in the Data worksheet.

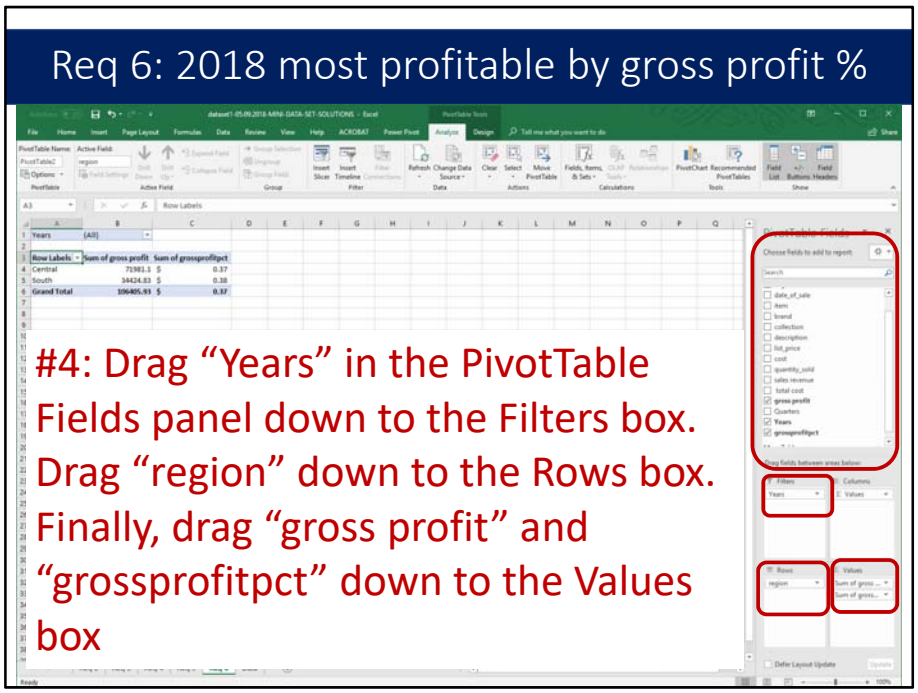


On the Insert ribbon, click on Pivot Table and accept the defaults to insert a new pivot table in the workbook.

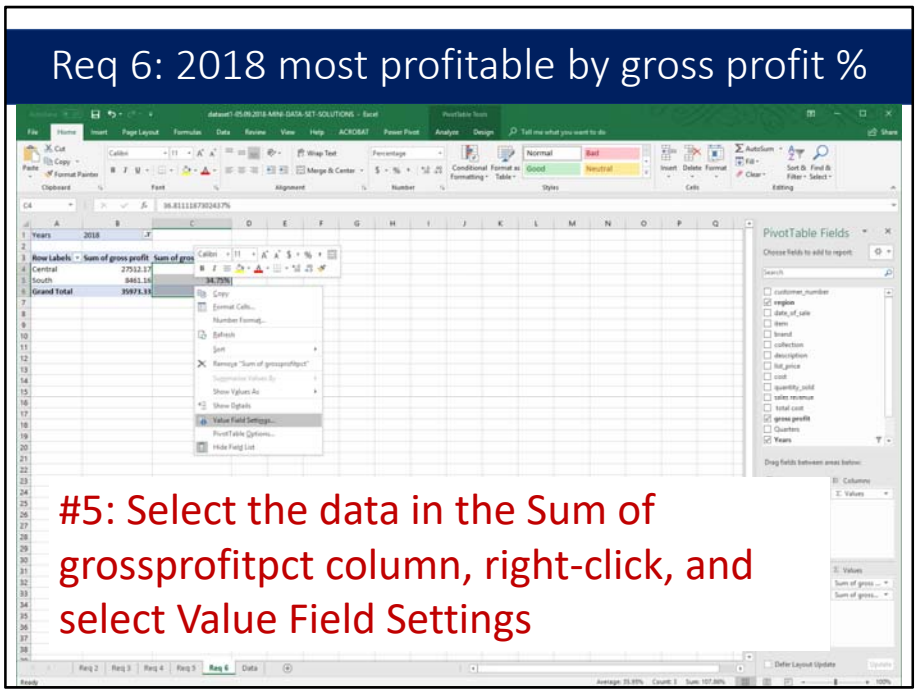
Req 6: 2018 most profitable by gross profit %



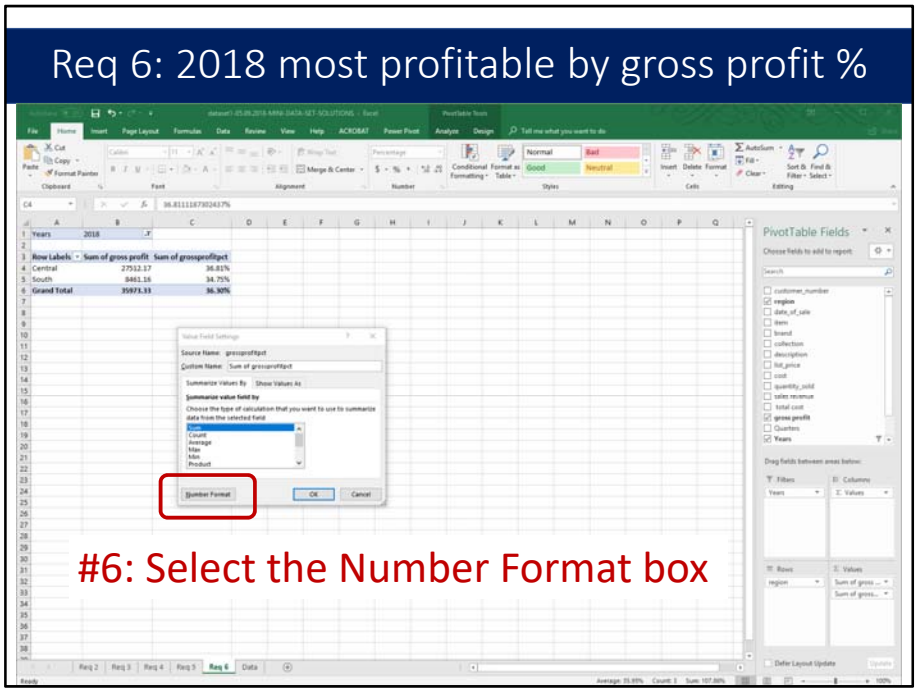
Before we go any further, right-click the worksheet name tab and rename it “Req 6.” That will help to keep track of the pivot tables.



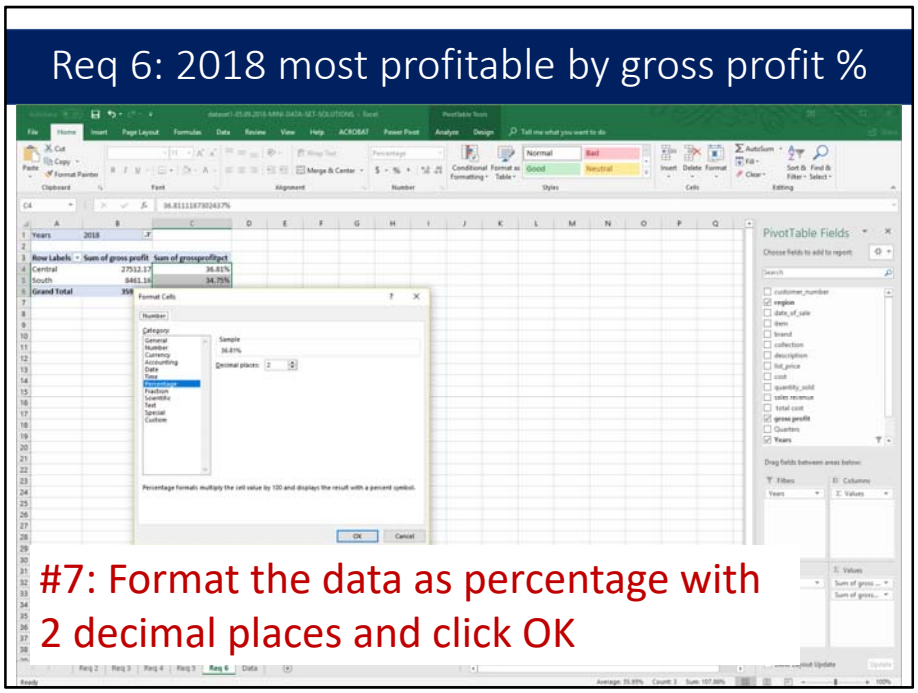
Next, drag “Years” in the PivotTable Fields panel down to the Filters box. Drag “region” down to the Rows box. Finally, drag “gross profit” and “grossprofitpct” down to the Values box.



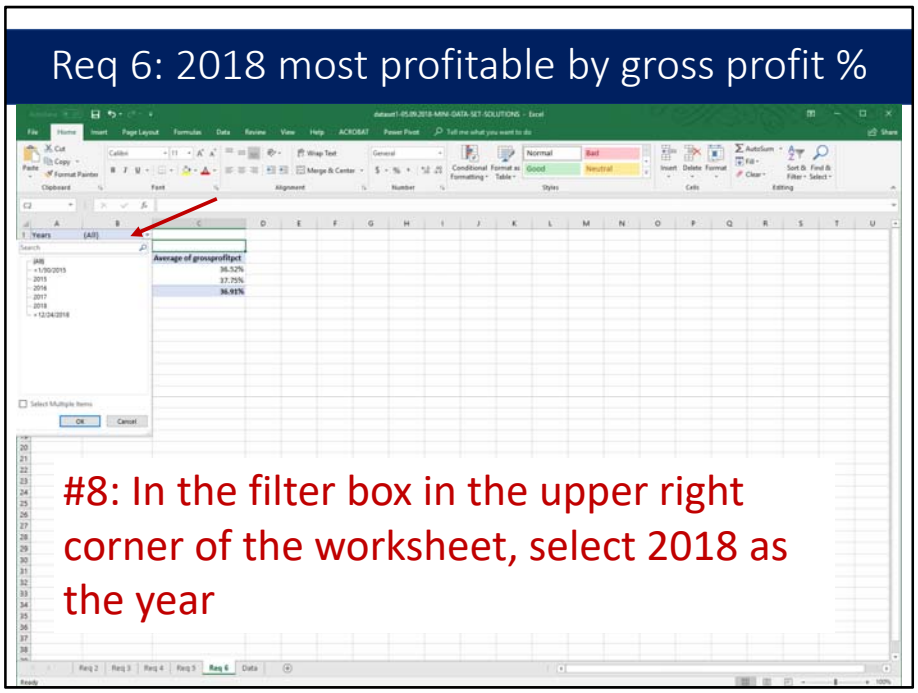
Select the data in the Sum of grossprofitpct column, right-click, and select Value Field Settings.



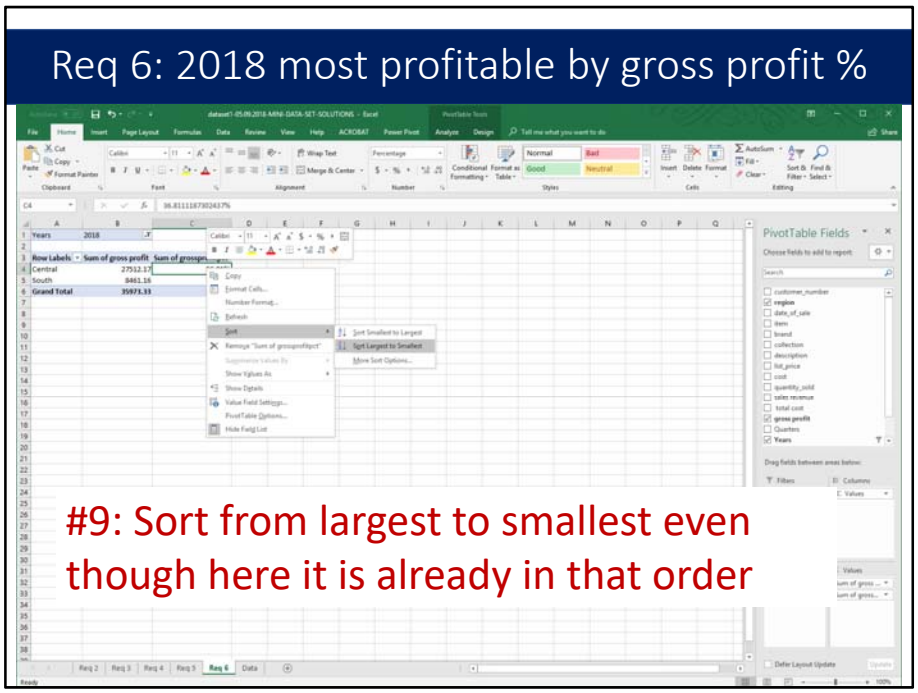
Next, in the Value Field Settings, select the Number Format box.



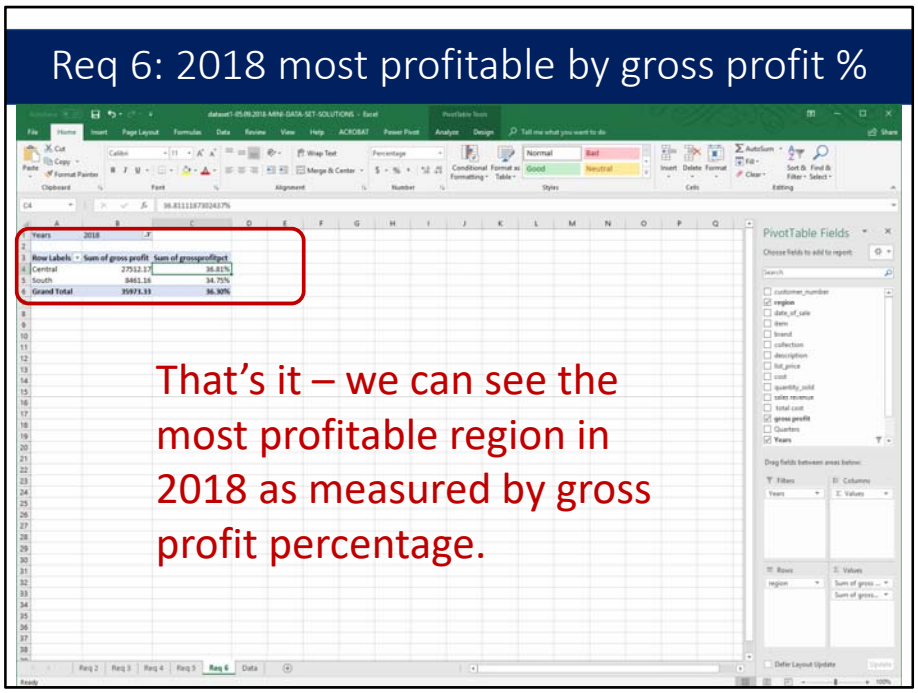
Format the data as percentage with 2 decimal places and click OK.



In the filter box in the upper right corner of the worksheet, select 2018 as the year.



Sort the data from largest to smallest even though here in this small data set, it is already in that order. In the large data set, sorting from largest to smallest will make a difference.



That's it – we can see the most profitable region in 2018 as measured by gross profit percentage.

Prepared by:
Wendy M. Tietz, PhD, CPA, CMA, CSCA

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That concludes this data analytics tutorial covering sales, cost, and gross profit analysis using pivot tables and charts in Excel. Thanks for watching!