



Graphing

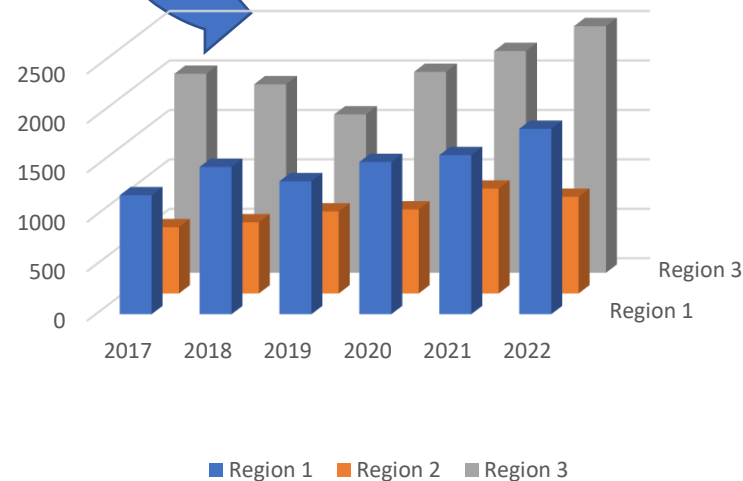
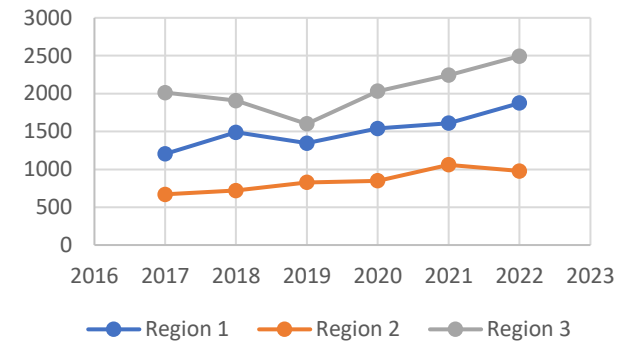
ELEC1006 ENGINEERING COMPUTING

Graphing in Excel

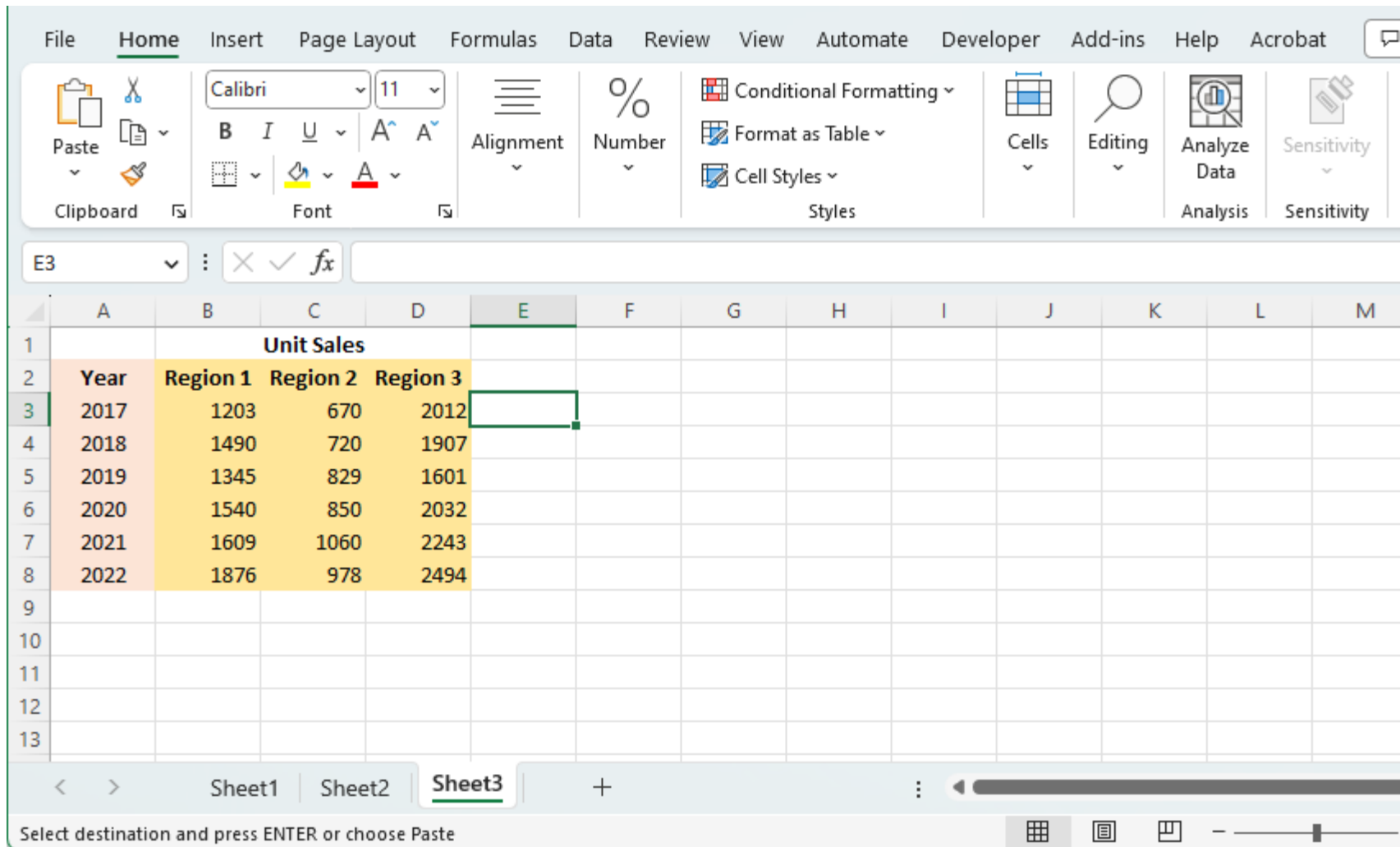
- Number of plot types (line, scatter plots, bar/pie charts, etc.)
- Trendlines
- Good built-in help and many online resources

Year	Unit Sales		
	Region 1	Region 2	Region 3
2017	1203	670	2012
2018	1490	720	1907
2019	1345	829	1607
2020	1540	850	2032
2021	1609	1060	2243
2022	1876	978	2494

Unit Sales



Example - Step 1: Prepare Data




The screenshot shows the Microsoft Excel interface with the 'Home' ribbon selected. The spreadsheet contains the following data:


	Unit Sales			
Year	Region 1	Region 2	Region 3	
2017	1203	670	2012	
2018	1490	720	1907	
2019	1345	829	1601	
2020	1540	850	2032	
2021	1609	1060	2243	
2022	1876	978	2494	

The active cell is E3, and the formula bar is empty. The status bar at the bottom indicates 'Select destination and press ENTER or choose Paste'.

Step 2: Select Data

	A	B	C	D	E
1		Unit Sales			
2	Year	Region 1	Region 2	Region 3	
3	2017	1203	670	2012	
4	2018	1490	720	1907	
5	2019	1345	829	1601	
6	2020	1540	850	2032	
7	2021	1609	1060	2243	
8	2022	1876	978	2494	
9					
10					
11					
12					
13					

Sheet1 | Sheet2 | **Sheet3**

Ready  Accessibility: Investigate

To select data, click with left mouse button (in windows), hold and drag across desired cells

Step 4: Edit the Series

4. Click on Select Data

Select Chart Design (should be on this selection)

The screenshot shows the Excel interface with the 'Chart Design' tab selected in the ribbon. The 'Select Data Source' dialog box is open, showing the data range and legend entries. The 'Legend Entries (Series)' section has 'Region 1' selected. The 'Horizontal (Category) Axis Labels' section is empty. The 'Switch Row/Column' button is visible. The 'Chart Design' tab is selected in the ribbon.

Year	Region 1	Region 2	Region 3
2017	1203	670	2012
2018	1490	720	1907
2019	1345	829	1601
2020	1540	850	2032
2021	1609	1060	2243
2022	1876	978	2494

5. 'Edit' the series to provide year information to x-axis

Step 5: Set the x-Axis Range

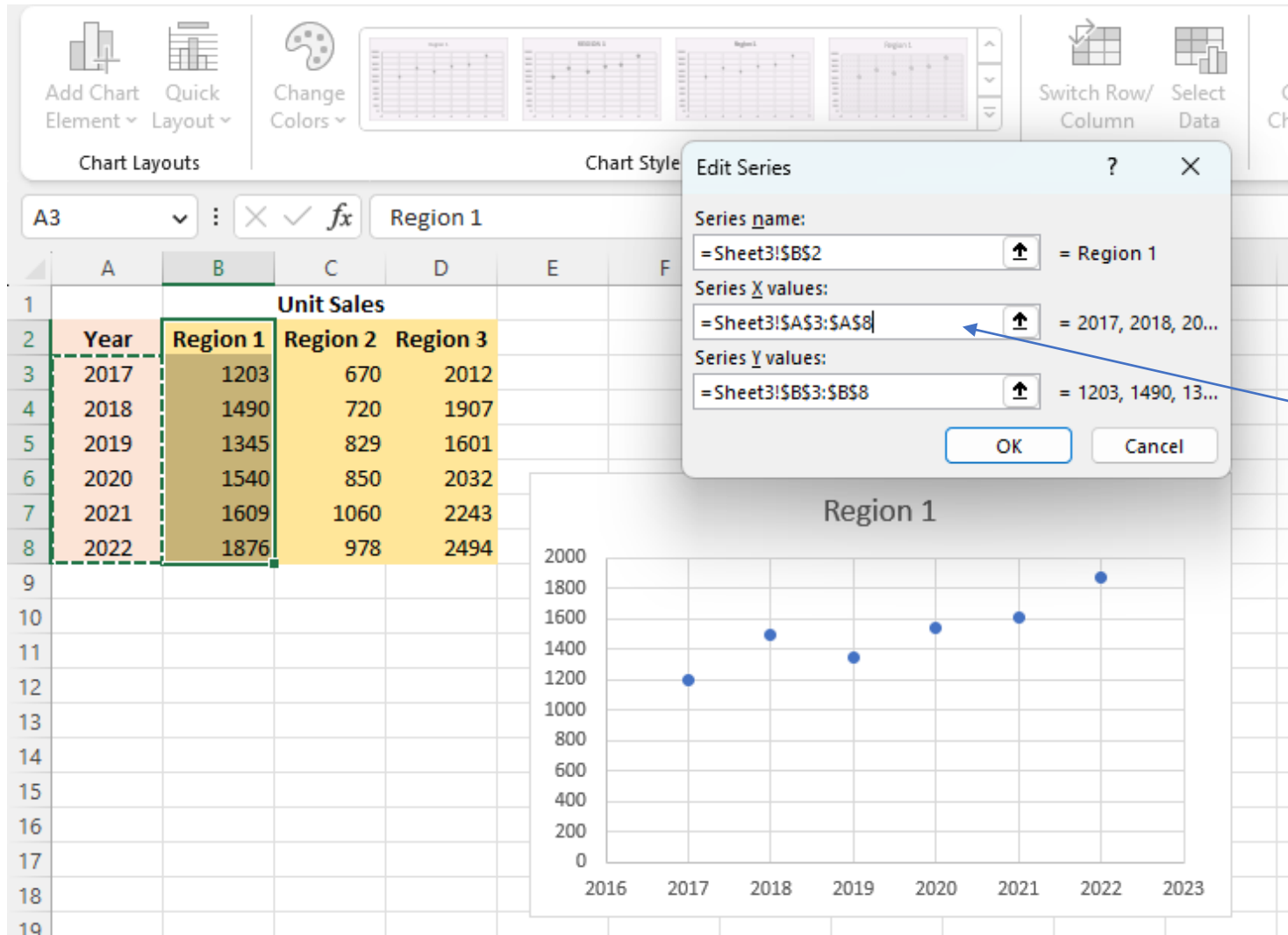


Chart Layouts | **Chart Styles** | **Switch Row/Column** | **Select Data**

Edit Series

Series name: =Sheet3!\$B\$2 = Region 1

Series X values: =Sheet3!\$A\$3:\$A\$8 = 2017, 2018, 20...

Series Y values: =Sheet3!\$B\$3:\$B\$8 = 1203, 1490, 13...

OK Cancel

Unit Sales				
Year	Region 1	Region 2	Region 3	
2017	1203	670	2012	
2018	1490	720	1907	
2019	1345	829	1601	
2020	1540	850	2032	
2021	1609	1060	2243	
2022	1876	978	2494	

Region 1

2000
1800
1600
1400
1200
1000
800
600
400
200
0

2016 2017 2018 2019 2020 2021 2022 2023

Click here and then select x-axis values (Year Column Values)



6. Select 'Add'

Step 6: Add Another Plot

File Home Insert Page Layout Formulas Data Review View Automate Developer Add-ins Help Acrobat Chart Design

Add Chart Element Quick Layout Change Colors

Chart Layouts Chart Styles Data Type Location

Switch Row/Column Select Data Change Chart Type Move Chart

A3 Region 1

	A	B	C	D
1		Unit Sales		
2	Year	Region 1	Region 2	Region 3
3	2017	1203	670	2012
4	2018	1490	720	1907
5	2019	1345	829	1601
6	2020	1540	850	2032
7	2021	1609	1060	2243
8	2022	1876	978	2494

Select Data Source

Chart data range: =Sheet3!\$A\$2:\$B\$8

Switch Row/Column

Legend Entries (Series)

Add Edit Remove

Region 1

Horizontal (Category) Axis Labels

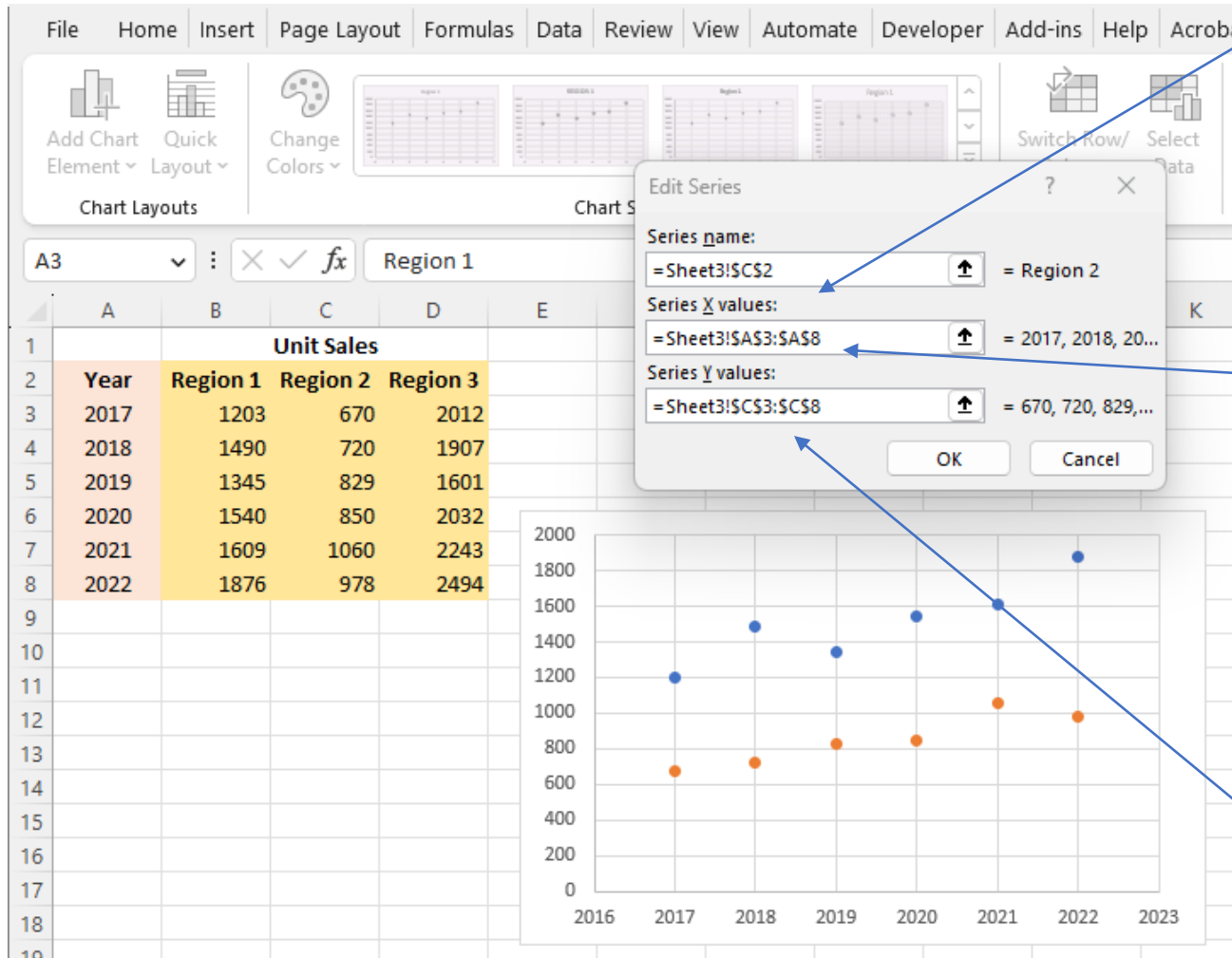
Edit

2017
2018
2019
2020
2021

Hidden and Empty Cells

OK Cancel

Step 7: Put in New Series Information



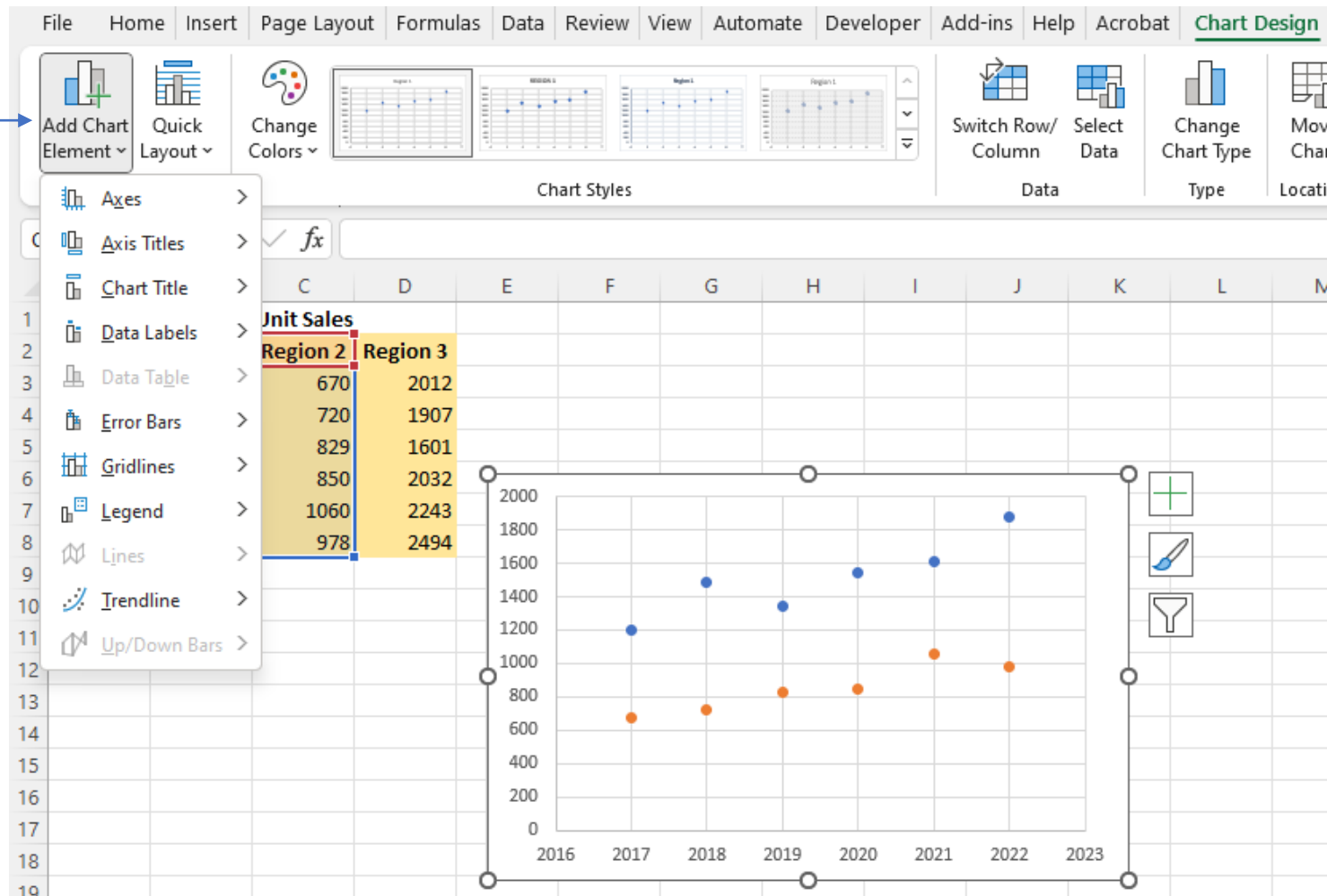
Set Series Name (Region 2)

Set X-Axis Values (Year values)

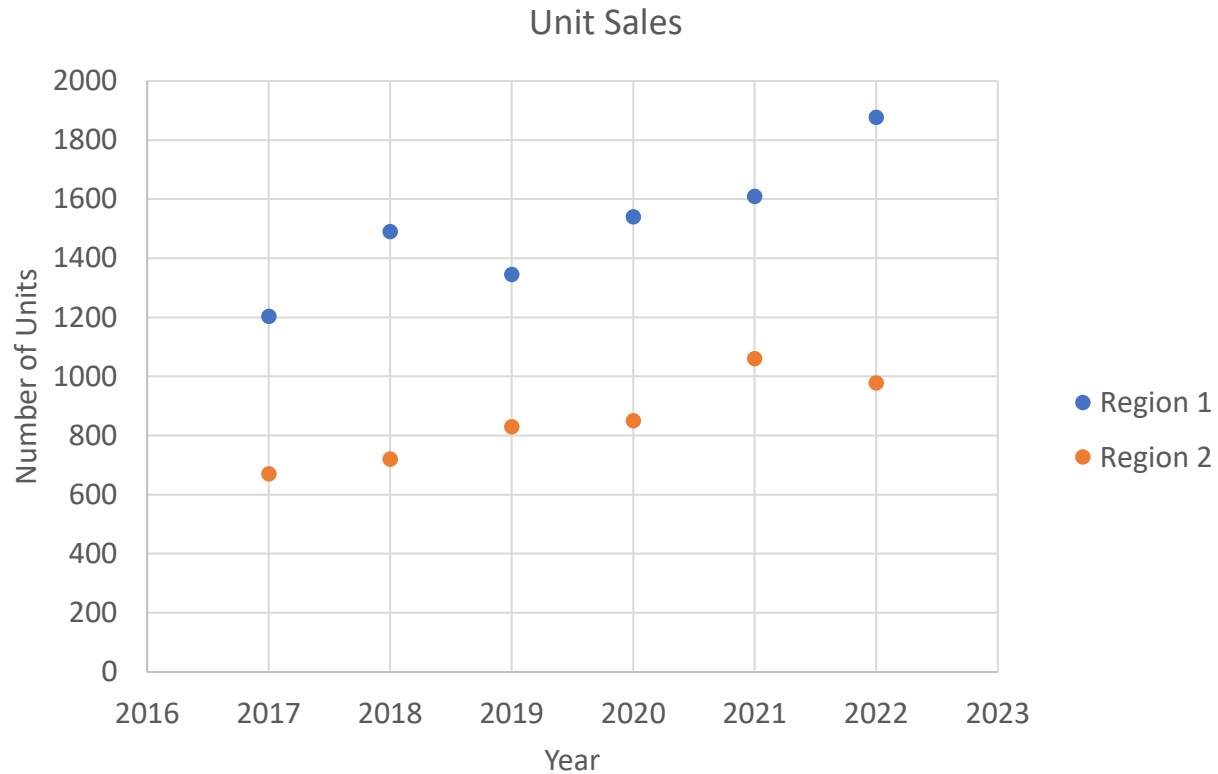
Set Y-Axis Values (Region 2 values)

Step 8: Format the Graph

Select "Add Chart Elements" to add Chart Title, Axis Title and Legend

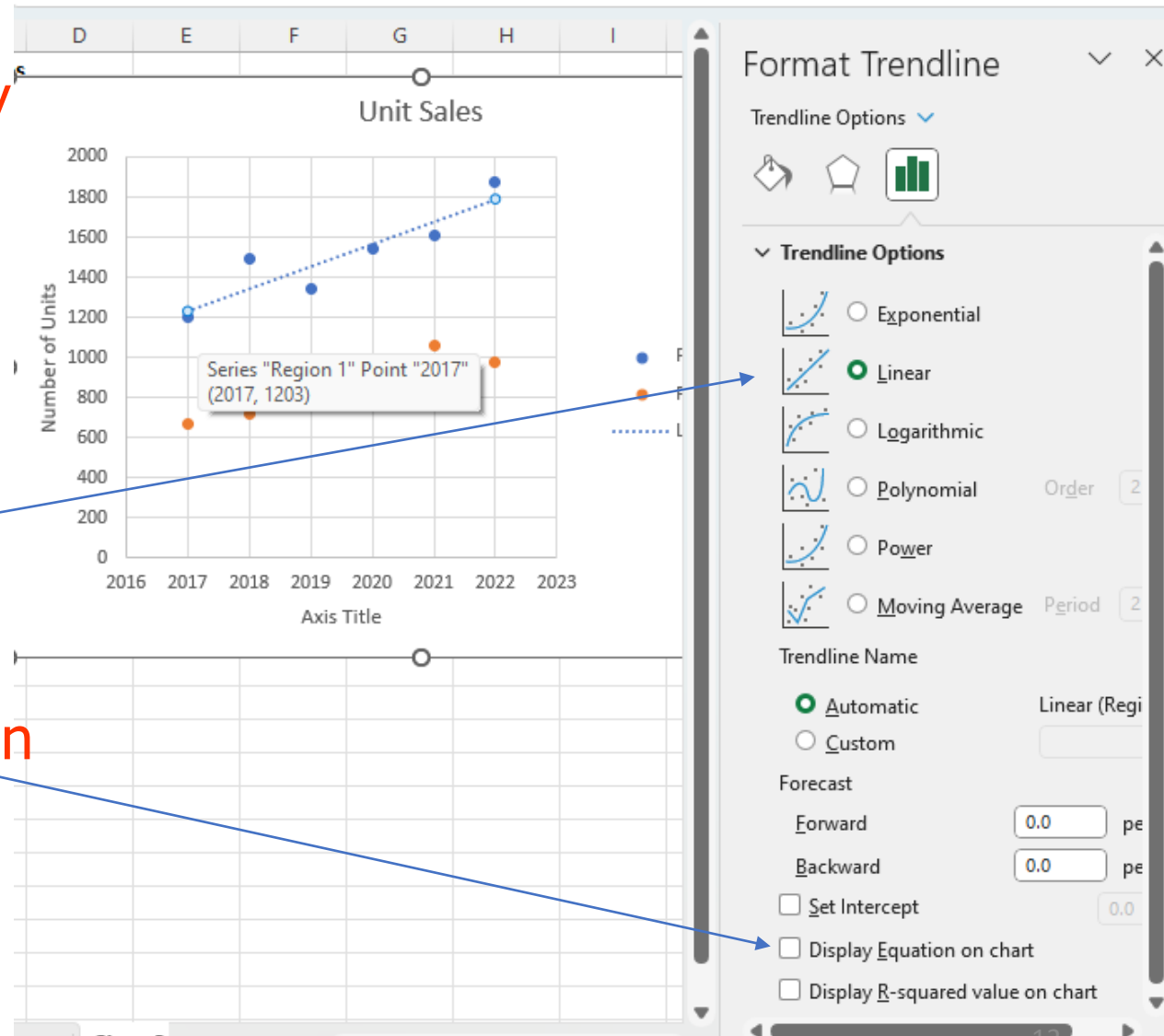


Example Graph Generated

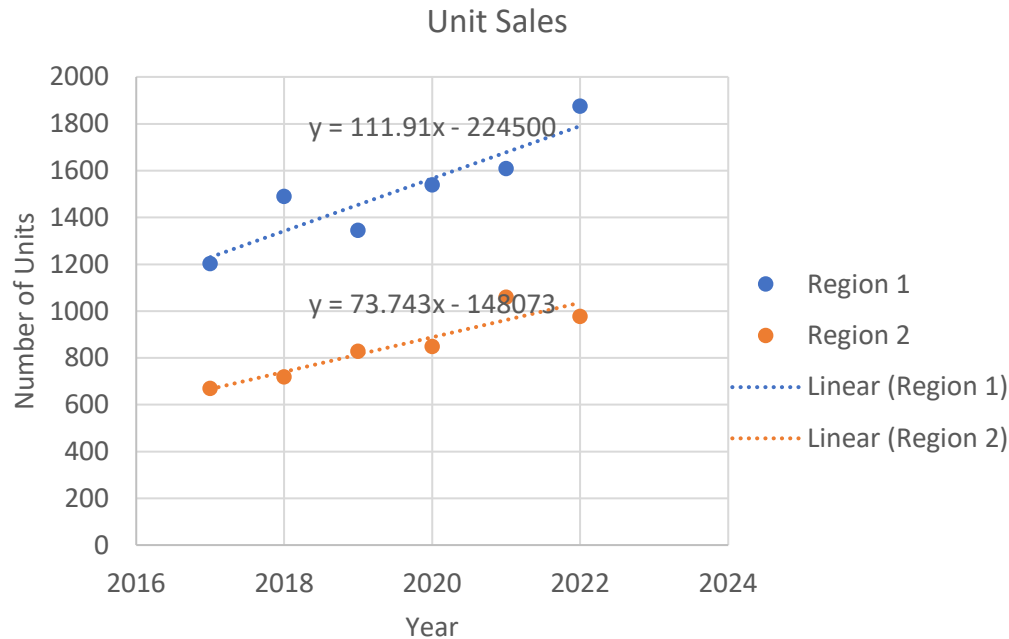


Add a Linear Trendline

- Right click on any data point and select the 'Add Trendline' option.
- Select Linear as the regression type (there are other options available)
- You can opt to show the equation of the line on the chart



Linear Trendlines in our Example



- How many units sales would we expect in 2025?
- We can predict that using the equations:
 - Region 1: 2097.5
 - Region 2: 1256.6
- Any issues with these predictions?

More info

- References
 - Excel online help
 - Number of good books on Excel: e.g. Larsen, R. W. (2021). *Engineering with Excel* (5th ed.). Boston: Pearson.
 - Numerous online resources
- Widely available, learn by using