

**Introduction to  
Information &  
Communication  
Technologies  
CL-1000**

**Lab 01**

**Features of MS Word and MS  
Excel**

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**National University of Computer & Emerging Sciences - NUCES - Karachi**



# National University of Computer & Emerging Sciences - NUCES - Karachi

Course Code: CL-1000	Introduction to Information & Communication Technologies
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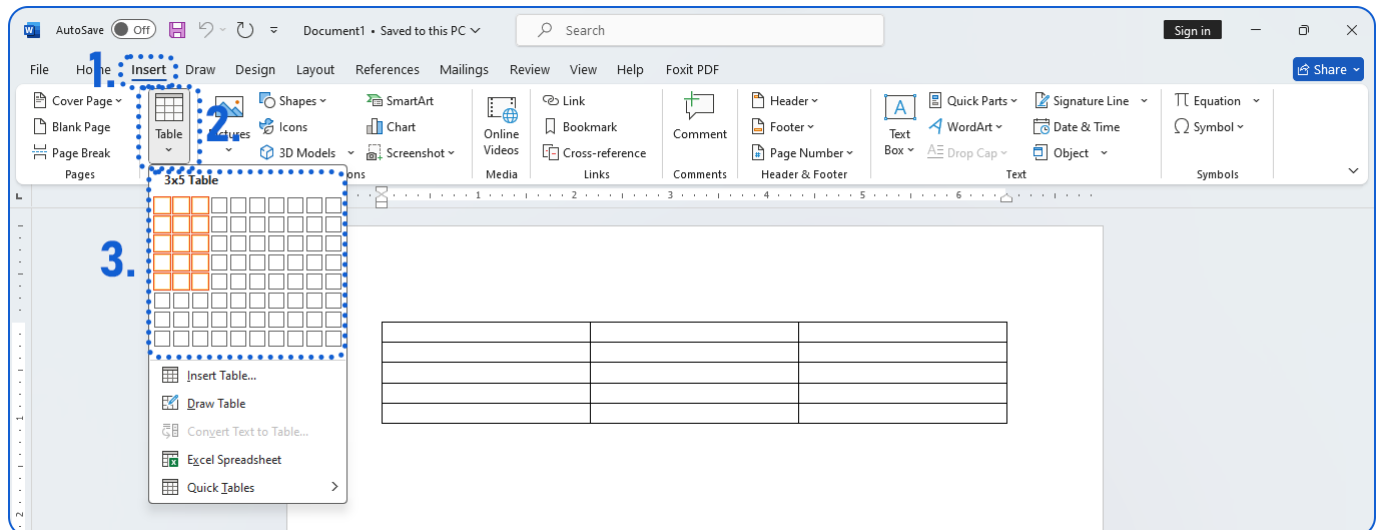
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# 1. Table Operations

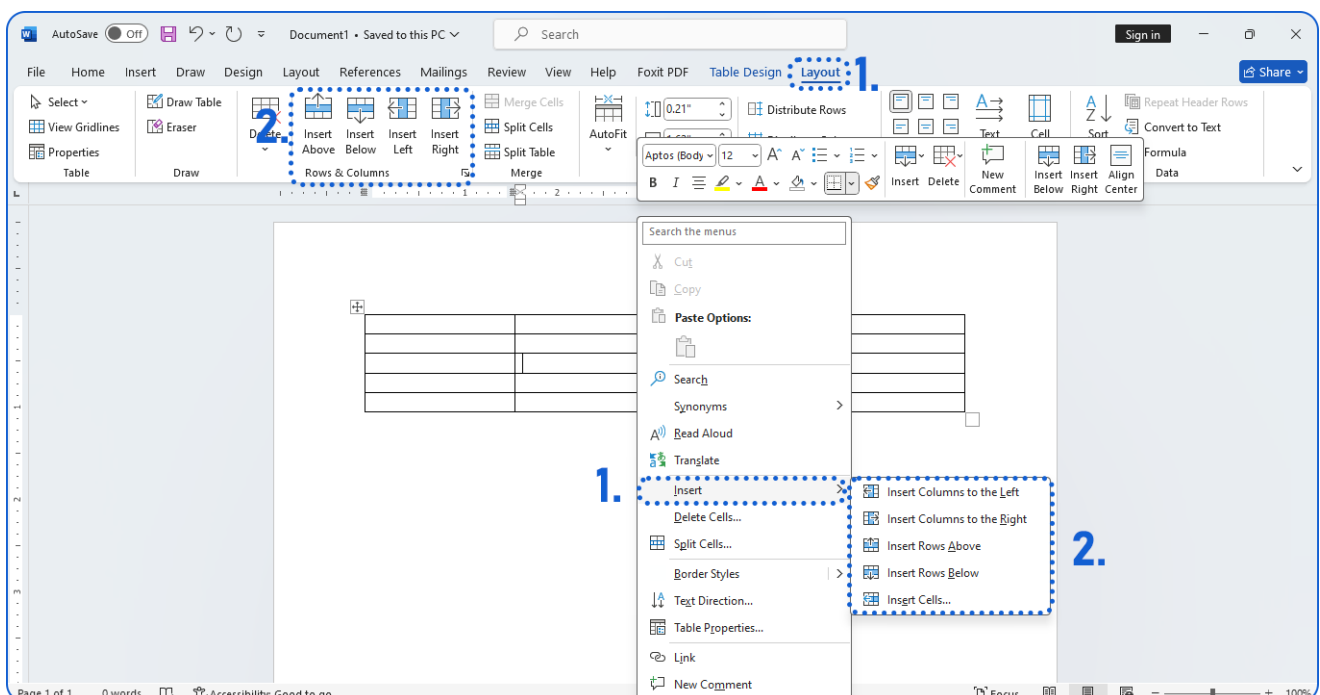
## 1.1 Creating a Table

1. Click on the **Insert** tab.
2. Click on **Table**.
3. Select the grid size by hovering the cursor on the grid. The desired table will be inserted.
4. You can also manually define the number of rows and columns of a table by click on **Insert Table...**



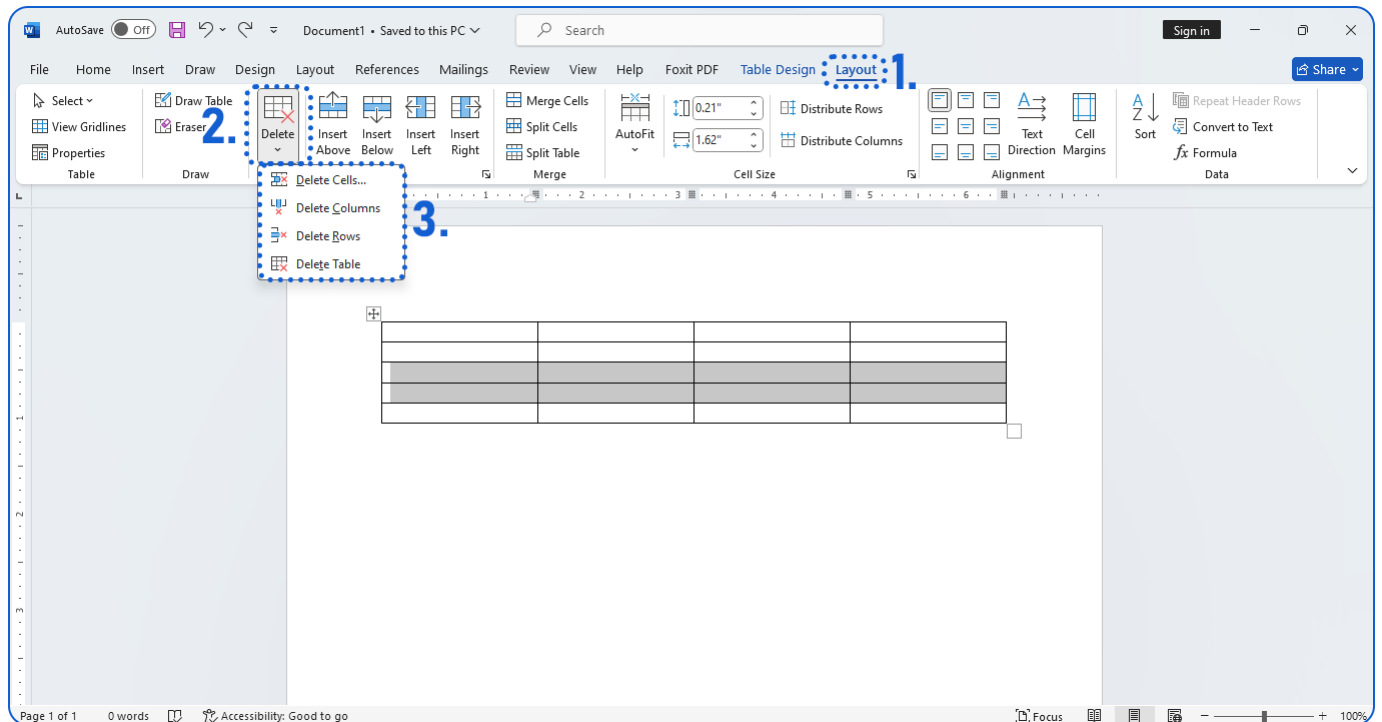
## 1.2 Inserting Rows and Columns in a Table

1. After inserting the table, a tab named **Layout** will appear. Click on it.
2. You can insert the rows and columns at the desired direction from the **Rows & Columns** section. Or you can right-click to a **row/column/cell**, then click on **insert** to do the same.



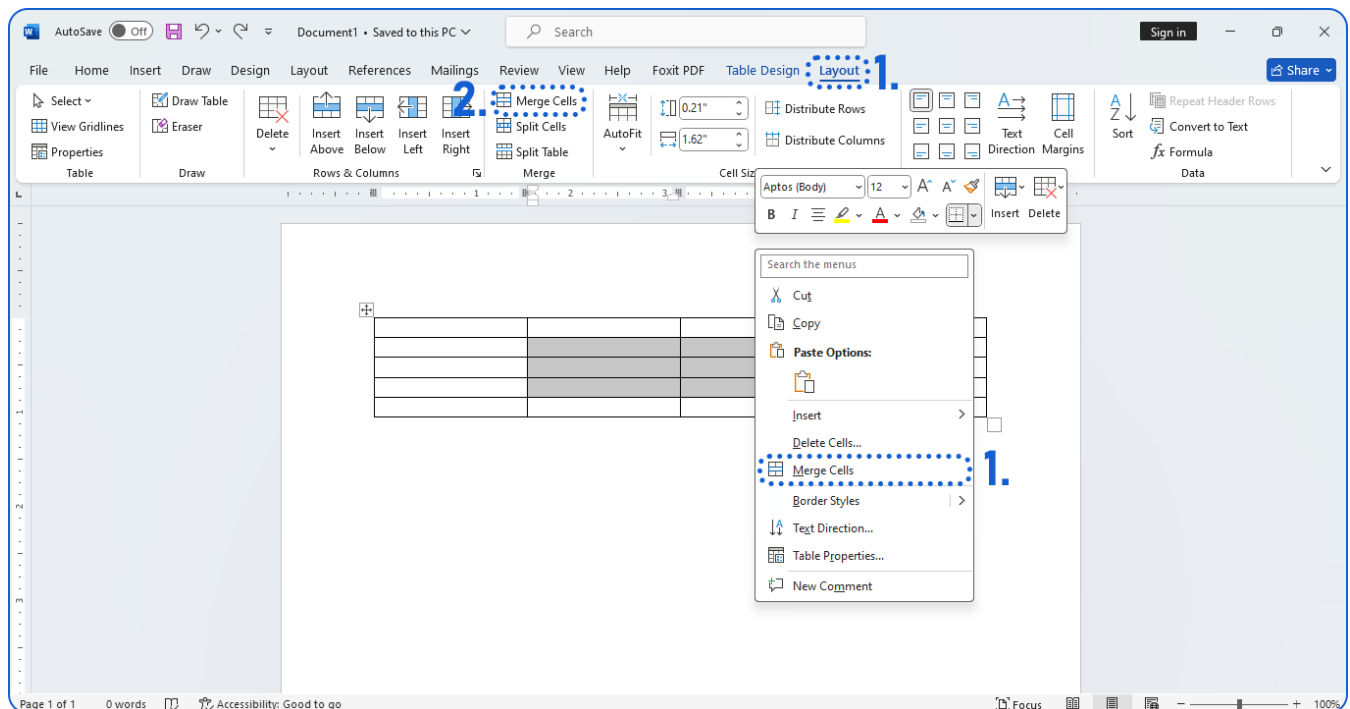
## 1.3 Deleting Rows and Columns of a Table

1. Select the desired row(s)/columns(s)/cells you want to delete.
2. Under the **Layout** tab, click on **Delete**. A drop-down menu will appear which allows you to delete the cells, rows, columns or the entire table.



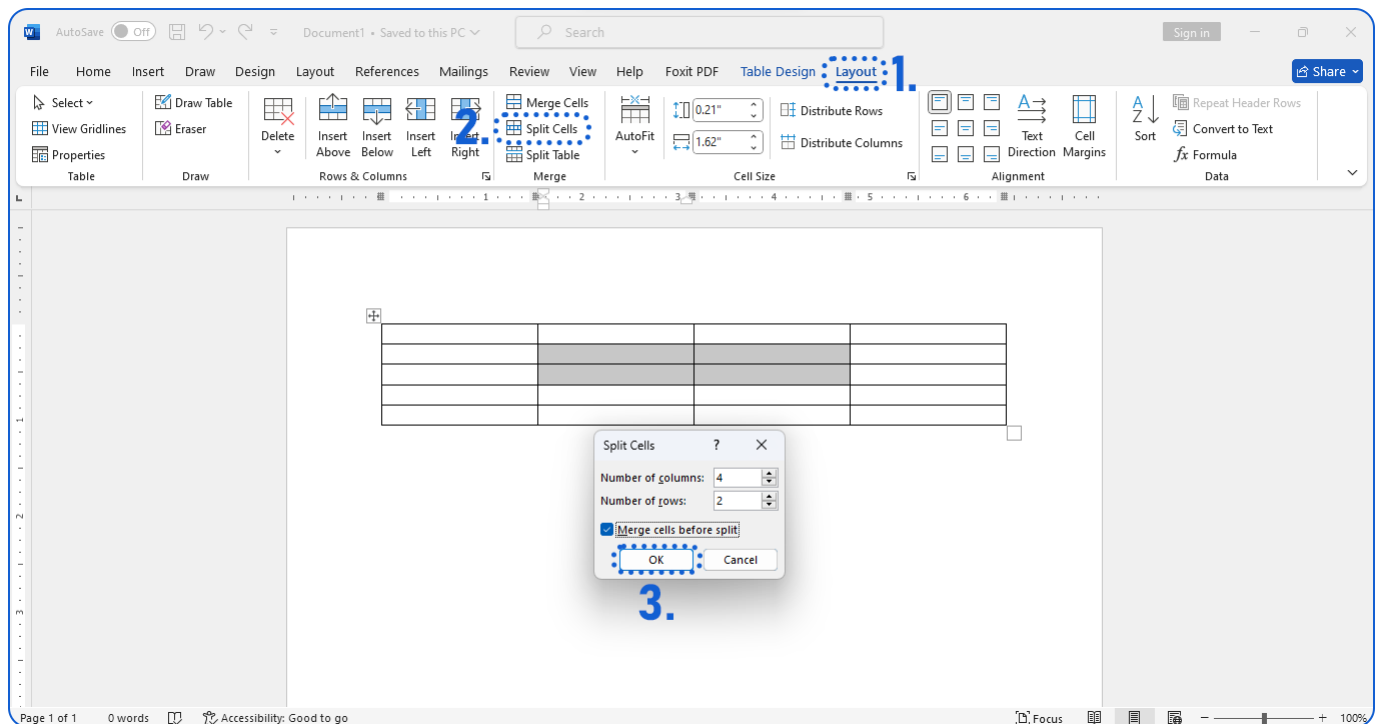
## 1.4 Merging Cells

1. Select the cells you want to merge.
2. Under the **Layout** tab, click **Merge**. Or, you can right-click on the selected cell and click on **Merge Cells**.



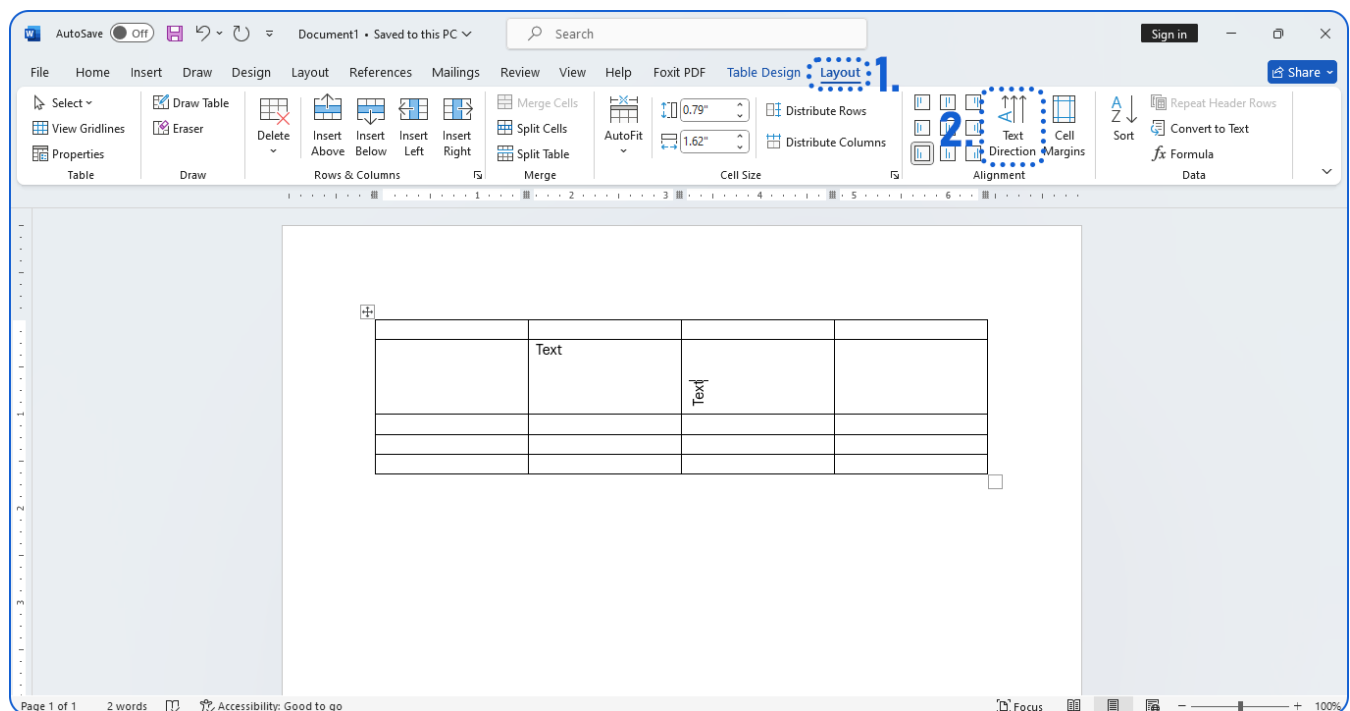
## 1.5 Splitting Cells

1. Select the cells you want to split.
2. Under the **Layout** tab, click on **Split**. A window will appear.
3. Insert the number of rows and columns in which you want to split the cells.



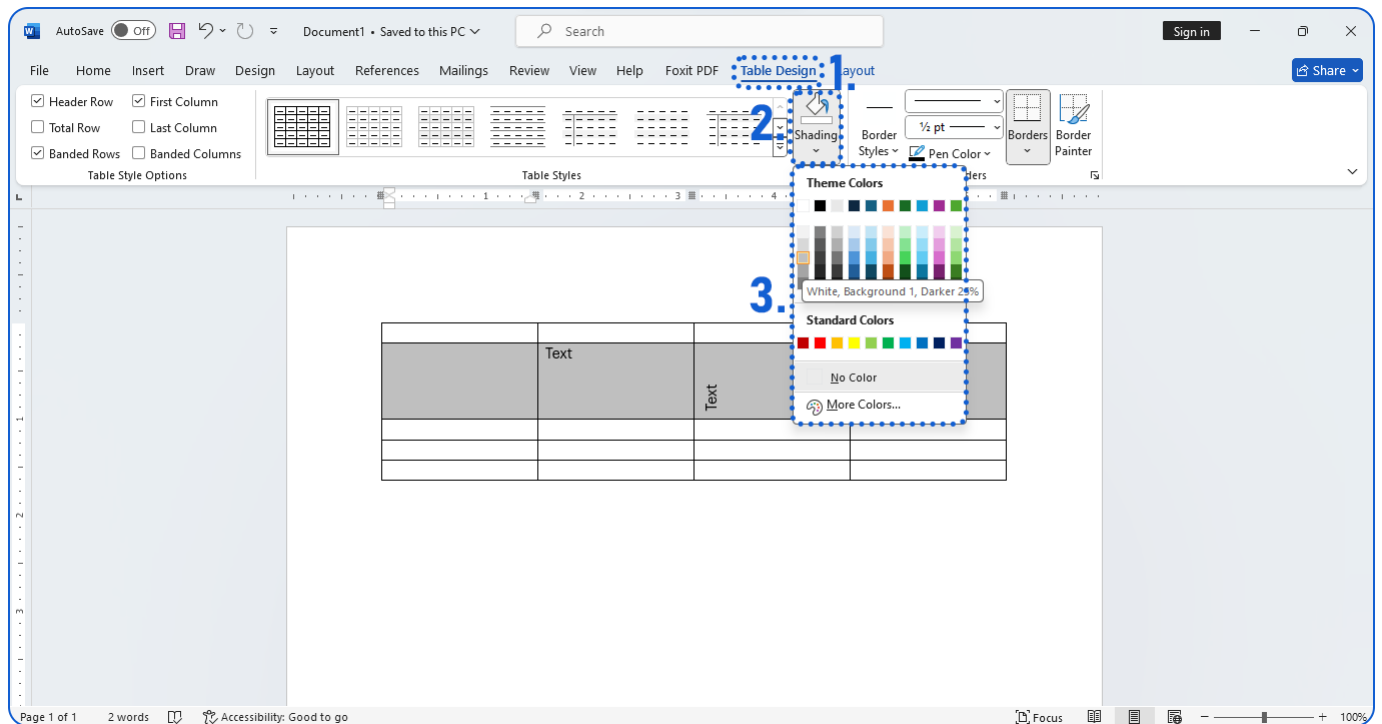
## 1.5 Changing Direction of Text in a Cell

1. Select the cell(s) to which you want to change the text direction.
2. Under the **Layout** tab, in the **Alignment** section, click on **Text Direction** to change the direction of the text to the direction you desire.



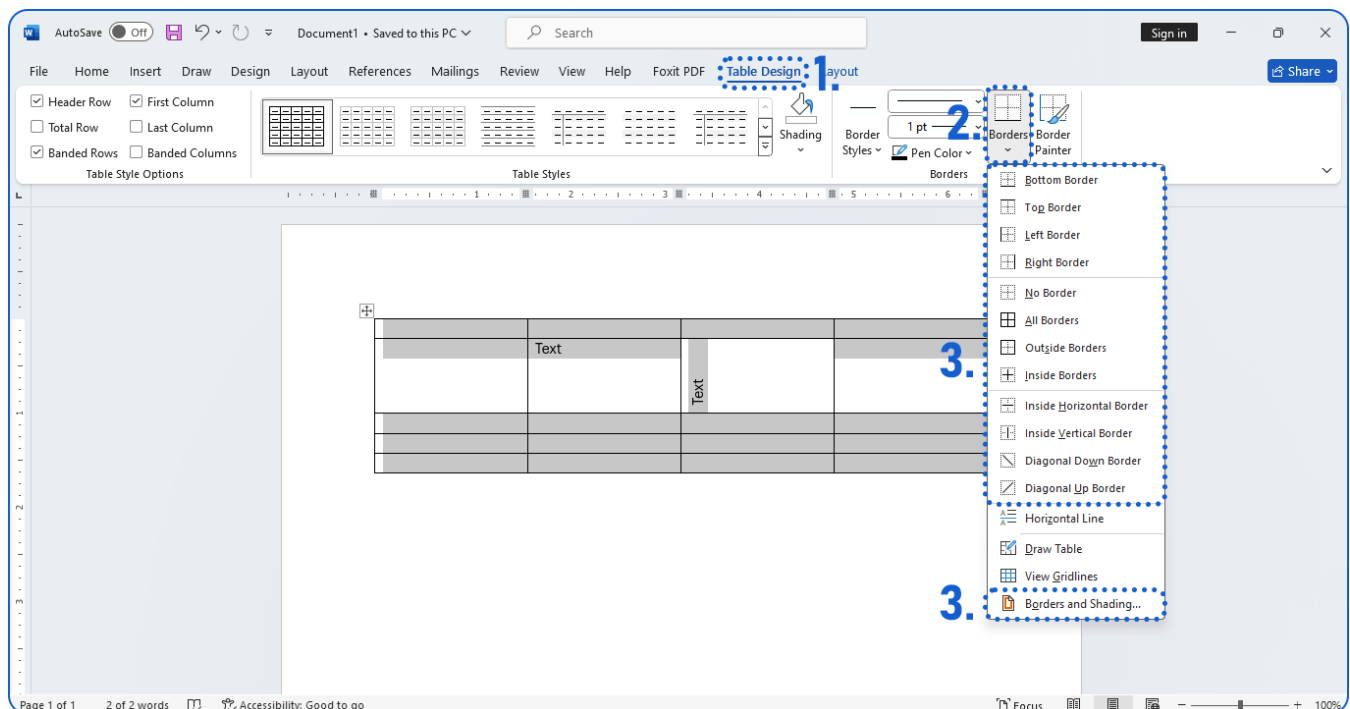
## 1.6 Apply Shading to Cells, Rows, and Columns

1. Select the row(s), columns(s) or cell(s) to apply shading on them.
2. Click on **Table Design** tab.
3. Click on **Shading** and choose your desire colour.

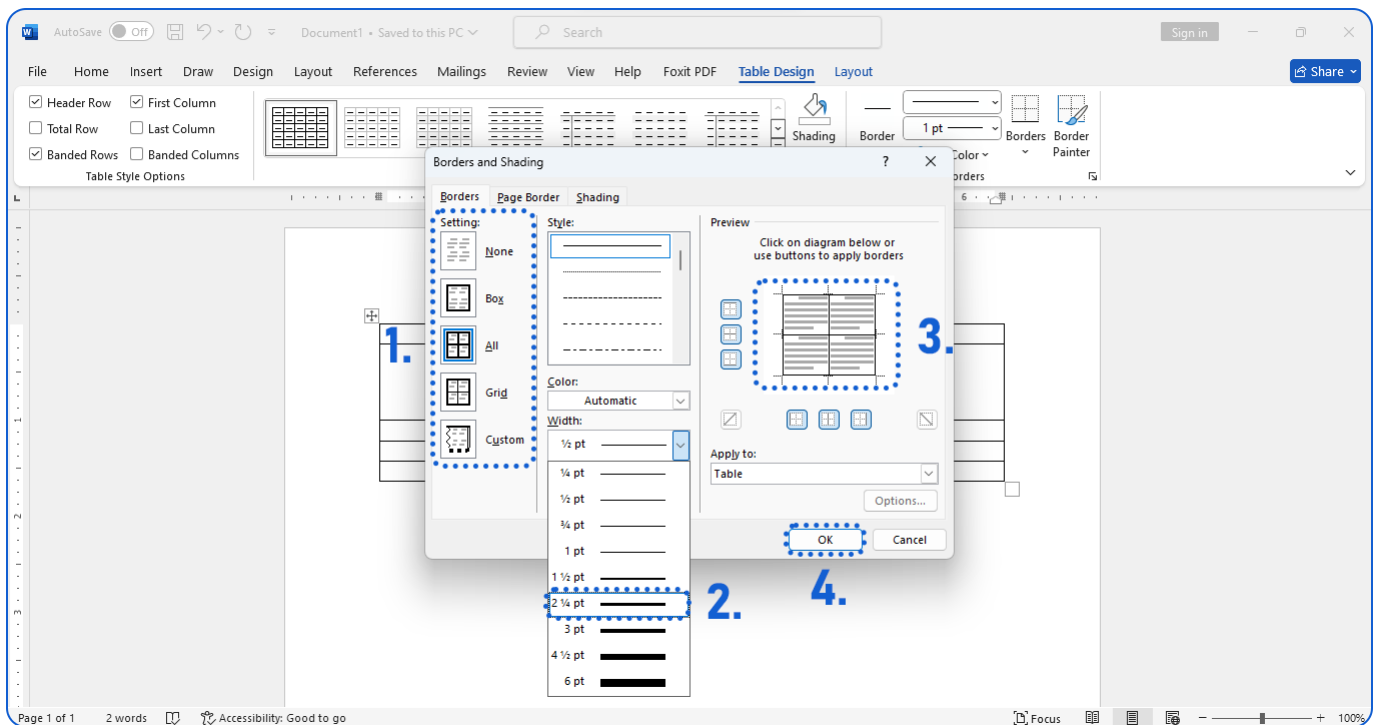


## 1.7 Apply Borders to Cells, Rows, and Columns

1. Select the row(s), columns(s) or cell(s) to apply border on them.
2. Under the **Table Design** tab, click on **Borders**.
3. Click on **Border and Shading...**

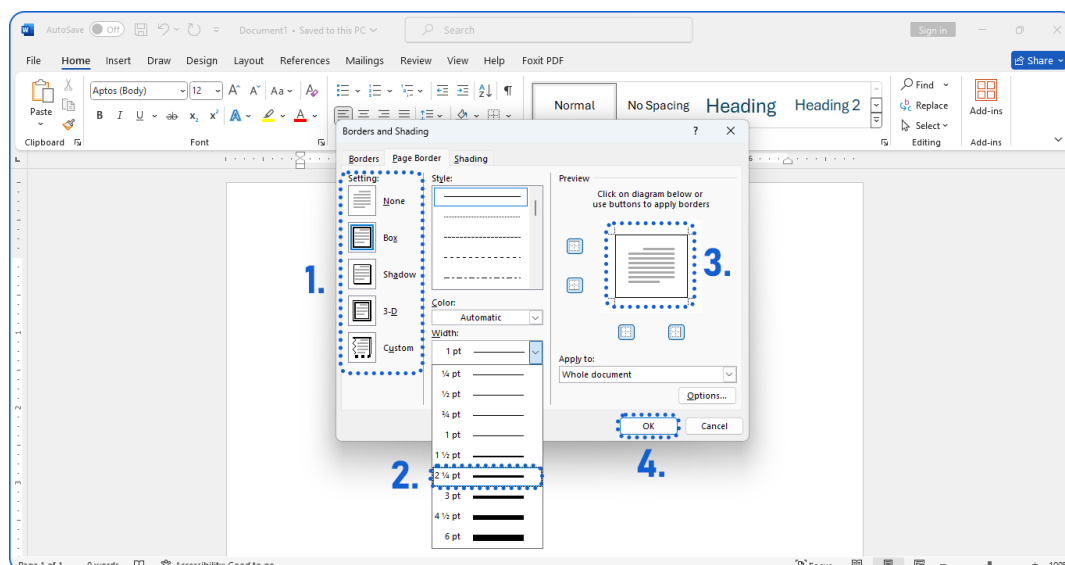


- The **Border and Shading** window will open.
- You can choose the border preset from **Setting** label, border style from the **Style** label, thickness of the border from the **Width** label and sides to which you want to apply the border.
- Click on **OK** after the changes you have made.



## 2. Apply Borders to a Page

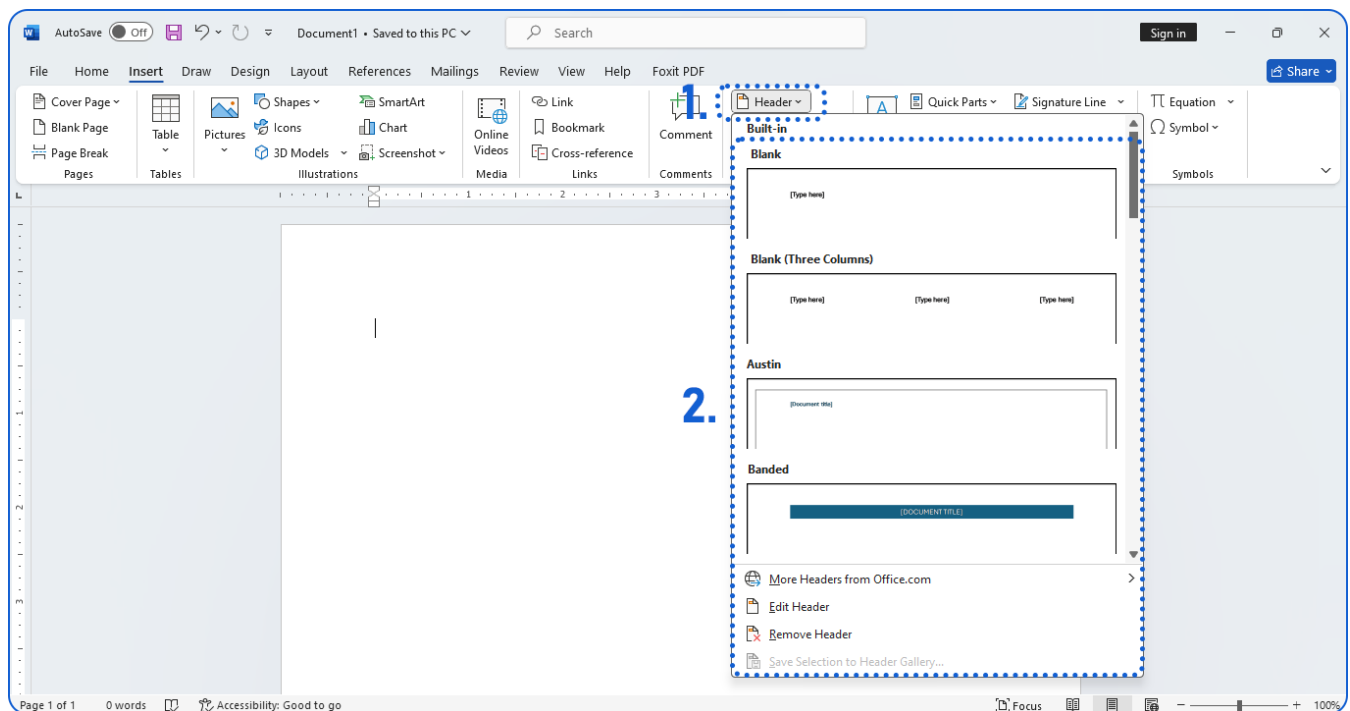
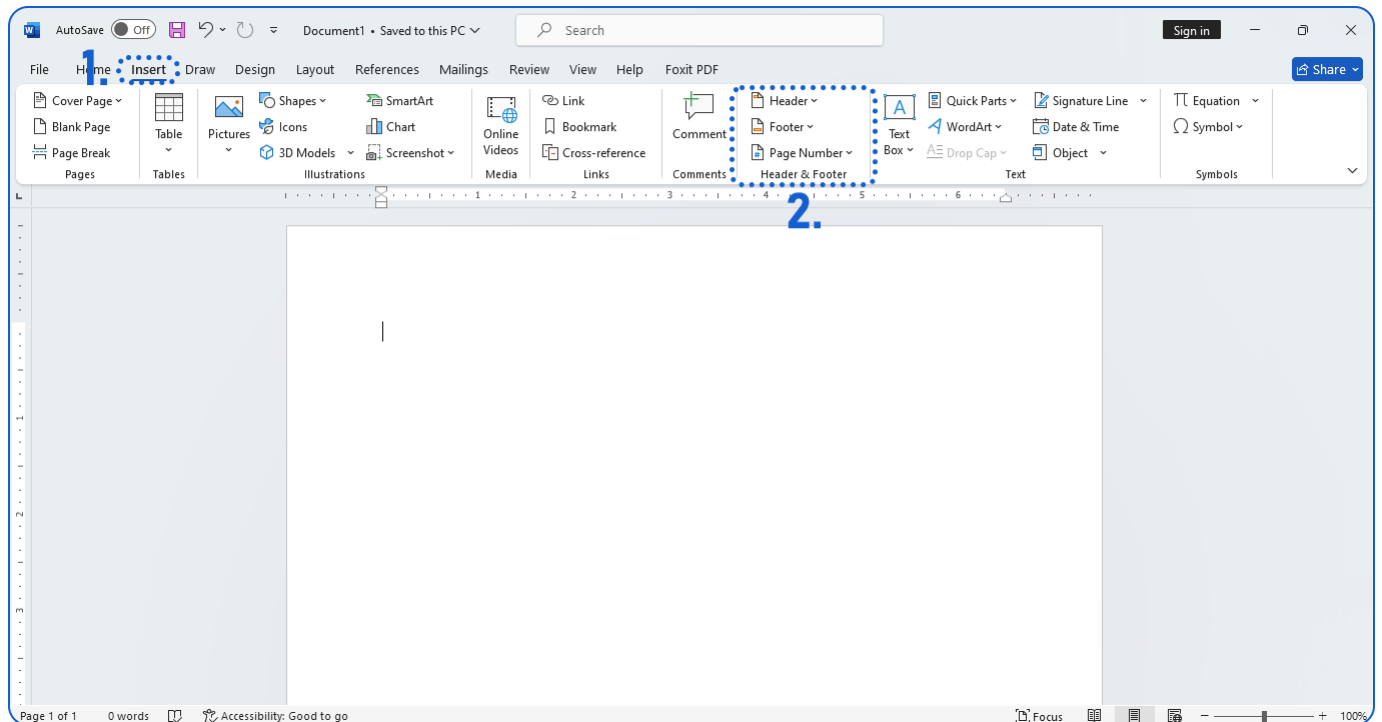
- Click on the **Home** tab.
- In the **Paragraph** section, click on the **dotted-box**, located in the second row at right-most side of the section.
- The **Borders and Shading** window will appear. Click on the **Page Border** tab.
- Follow the same steps as you have followed to apply borders on tables. (see section 1.7)

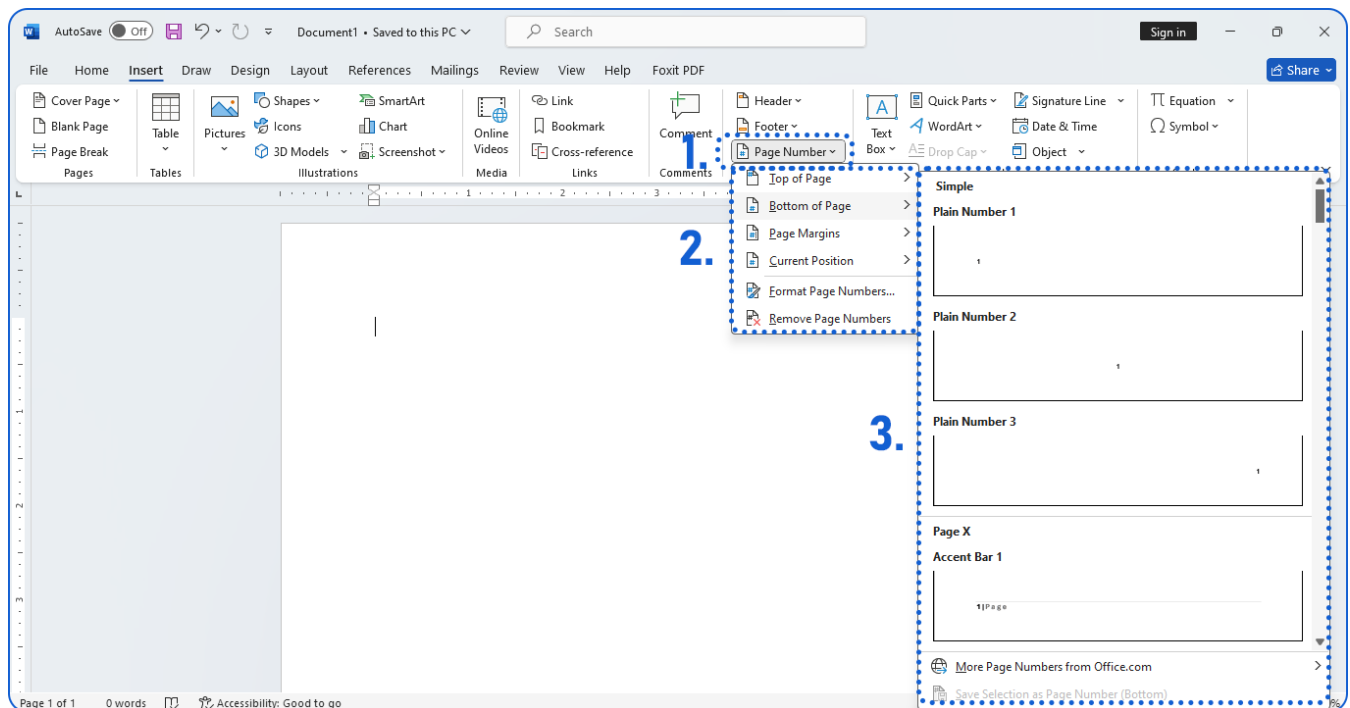
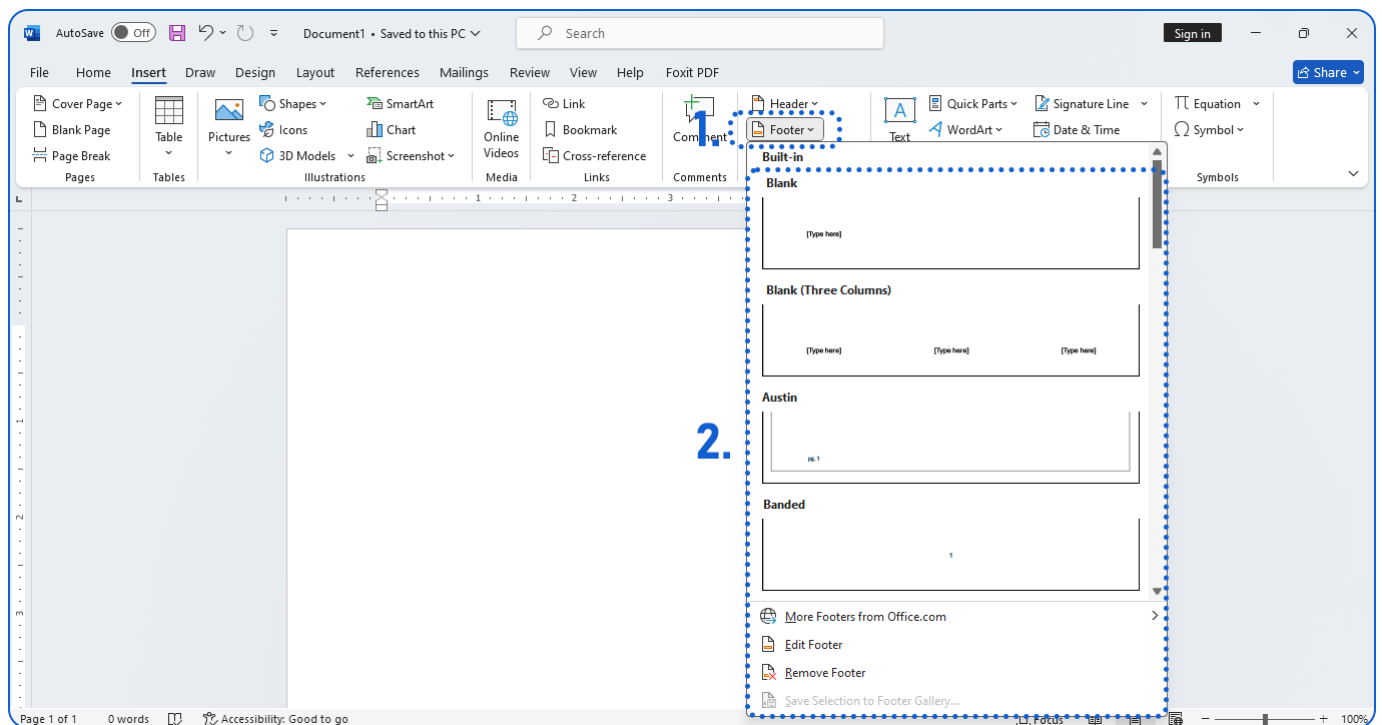




### 3. Apply Header, Footer and Page Numbers

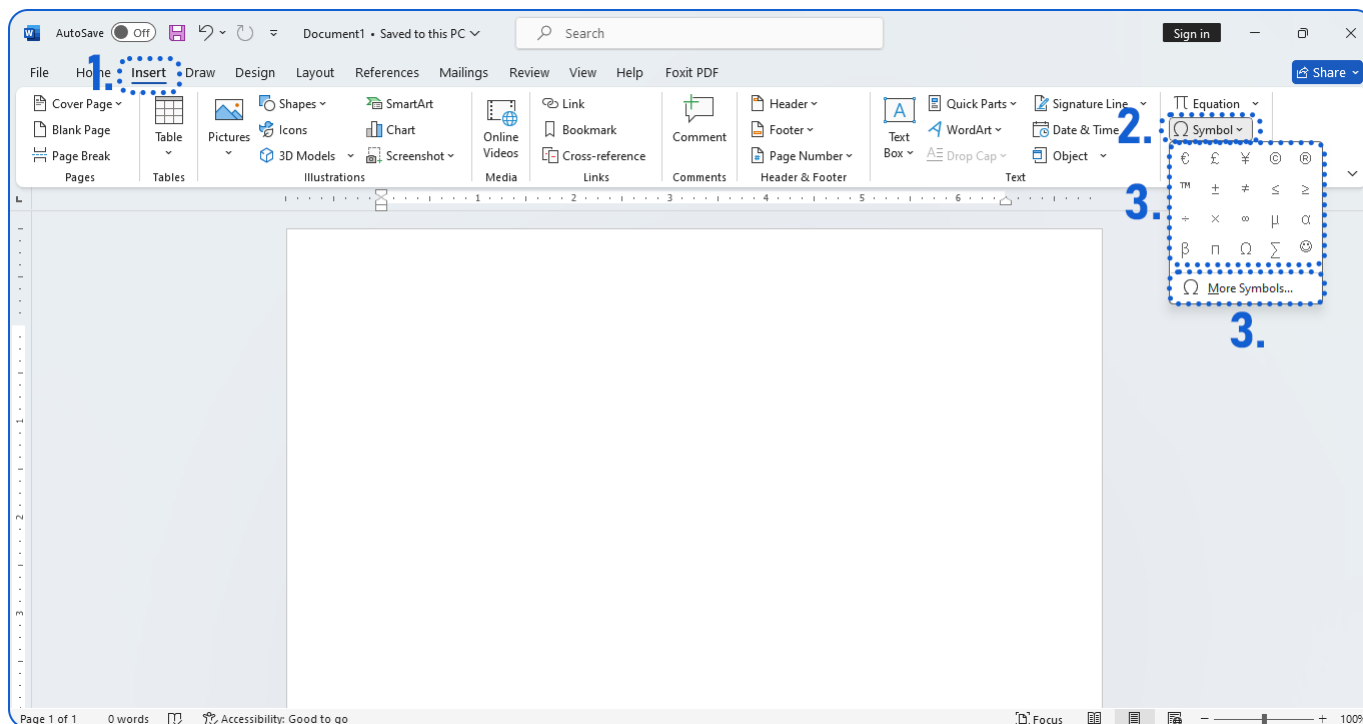
1. Click on the **Insert** tab.
2. In the **Head and Footer** section, you have all the options to apply and format header, footer and page numbers.



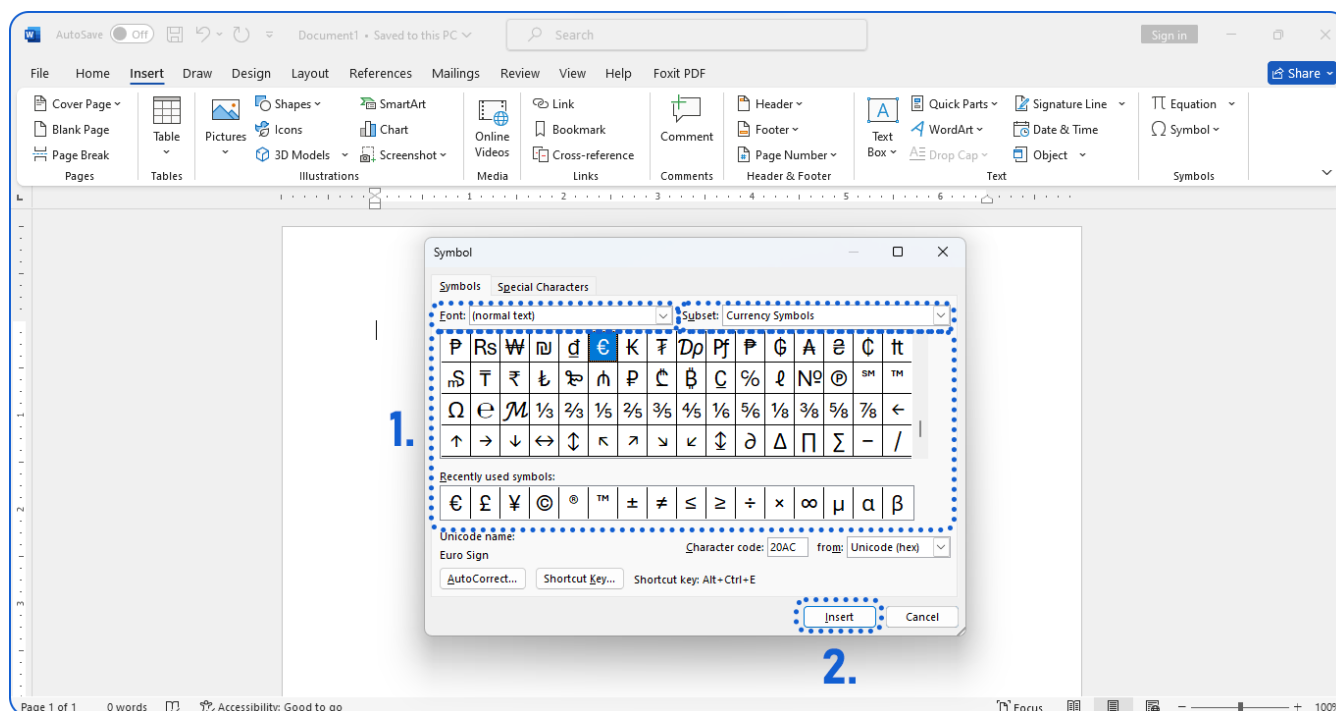


## 4. Inserting Symbols

1. Click on the **Insert** tab.
2. In the **Symbols** section, click on **Symbols**. A drop-down menu will appear.
3. You can select the most commonly used symbols suggested by **WORD** or you can click on **More Symbols...** to add other symbols.

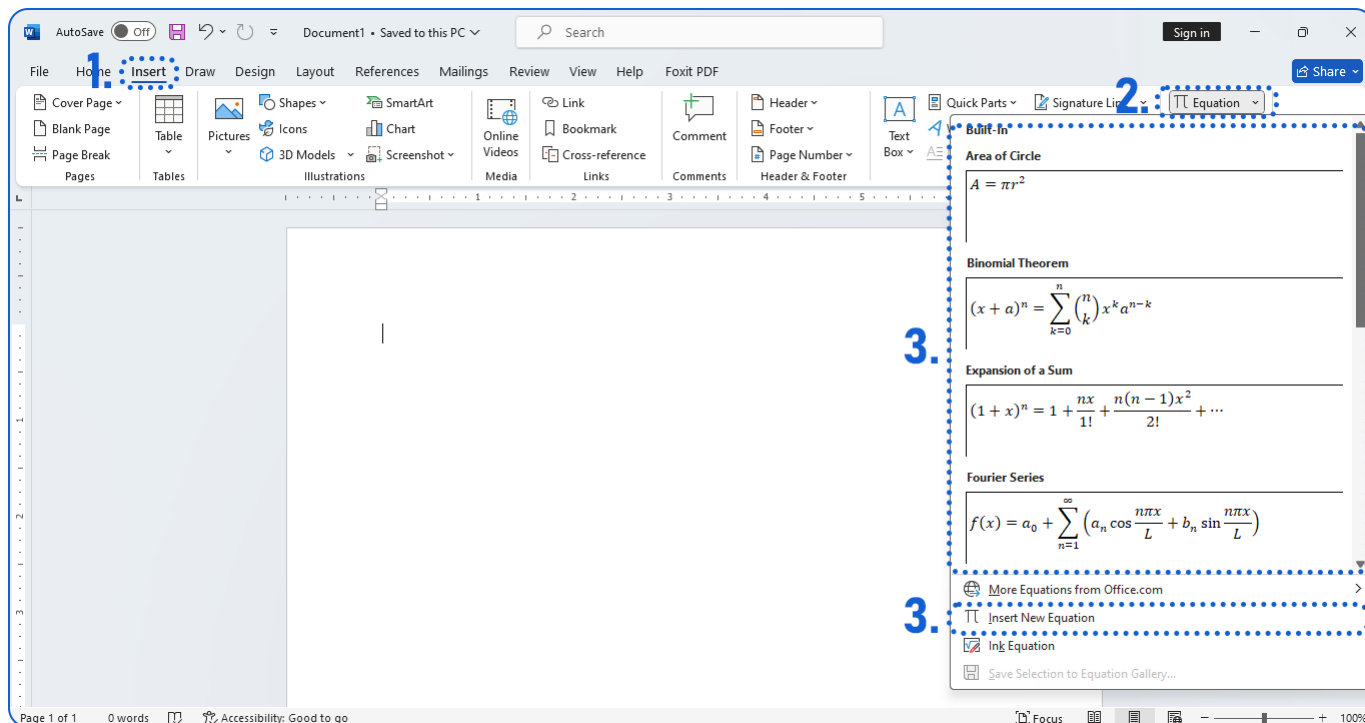


4. The **Symbol** window will appear where you can choose the **font** for the symbol, and the **type** of symbols.
5. Click on **Insert** after choosing the symbol.

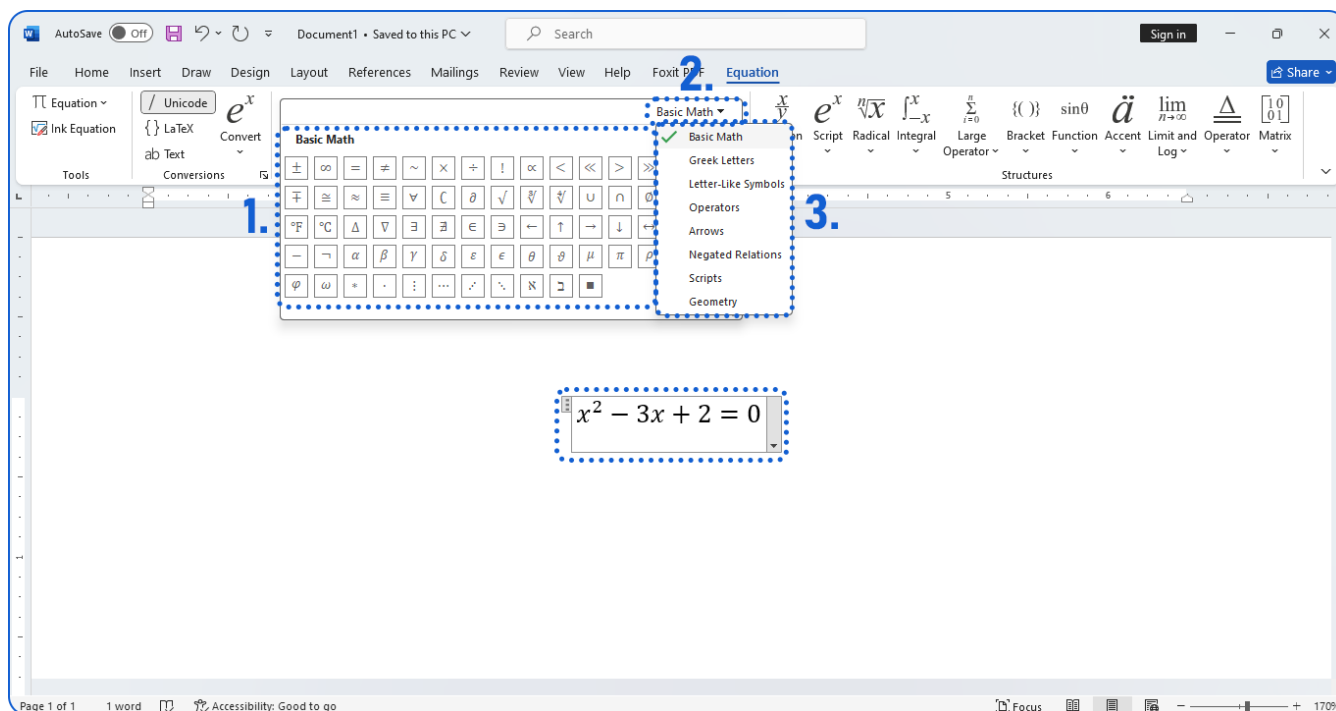


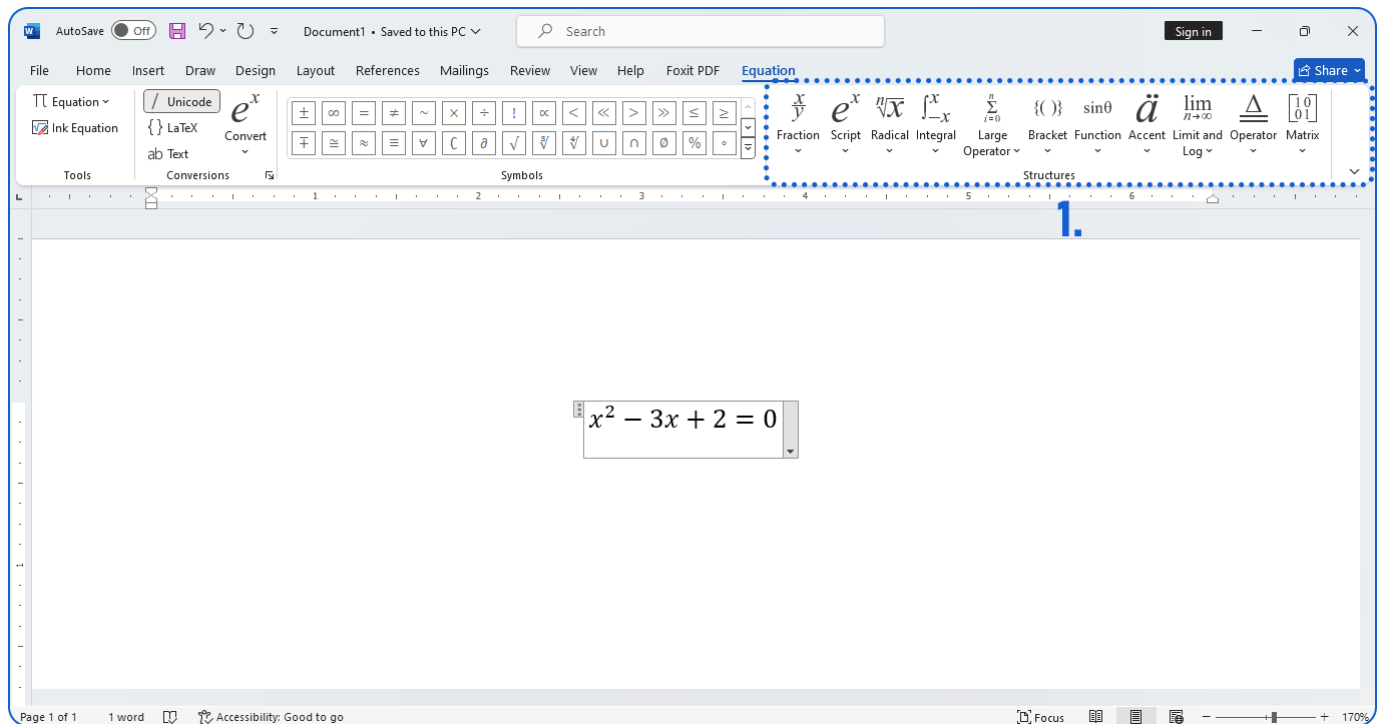
## 5. Inserting Equations

1. Click on the **Insert** tab.
2. In the **Symbols** section, click on **Equation**. A drop-down menu will appear.
3. You have a list of equations to choose. Or you can click on **Insert New Equation** to type the equation manually.



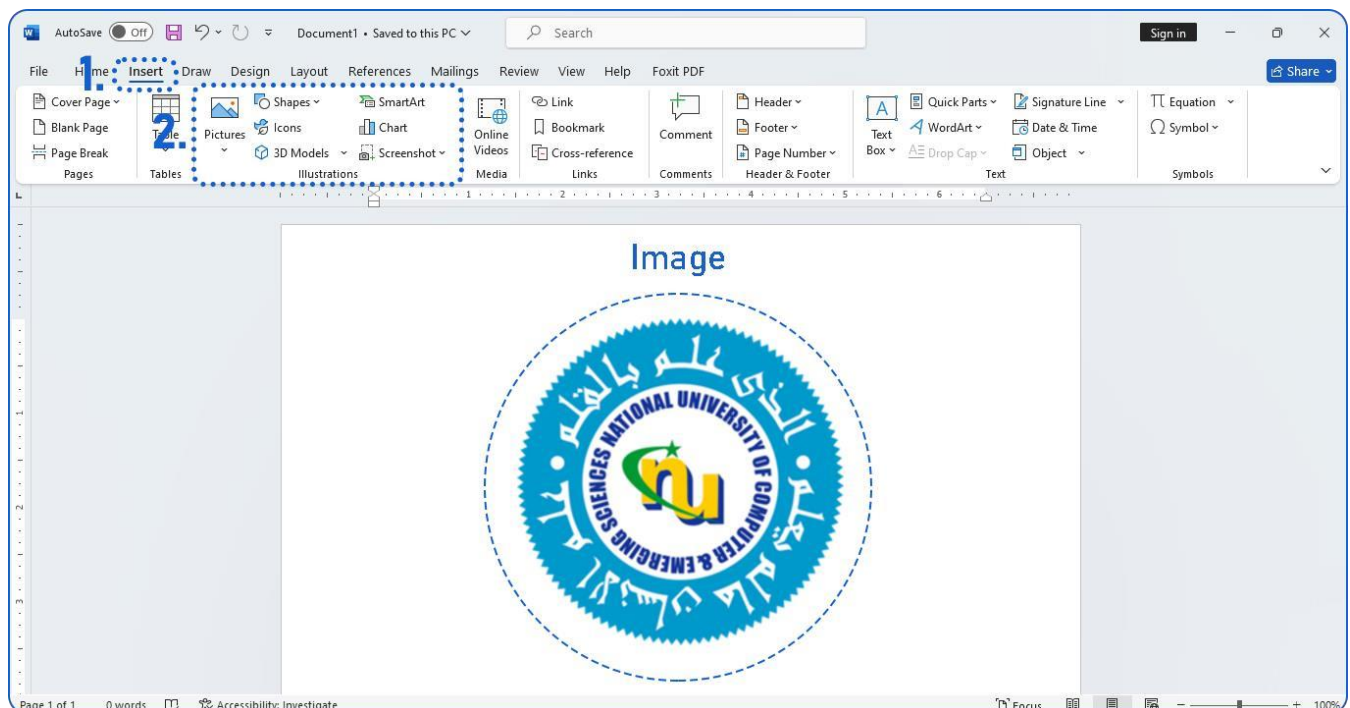
4. Now you can type the equation in the equation editor.
5. You can insert symbols and pre-designed equations structures under the **Equation** tab from the **Symbols** and **Structures** sections.





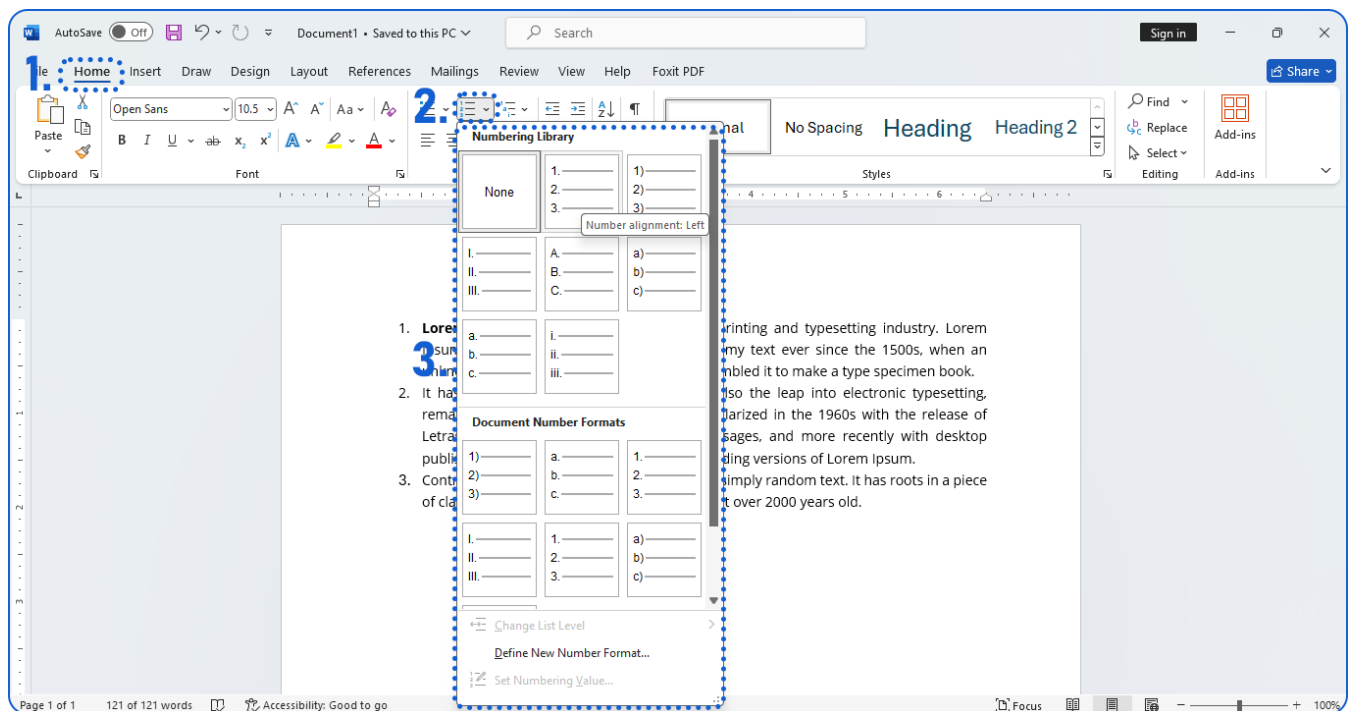
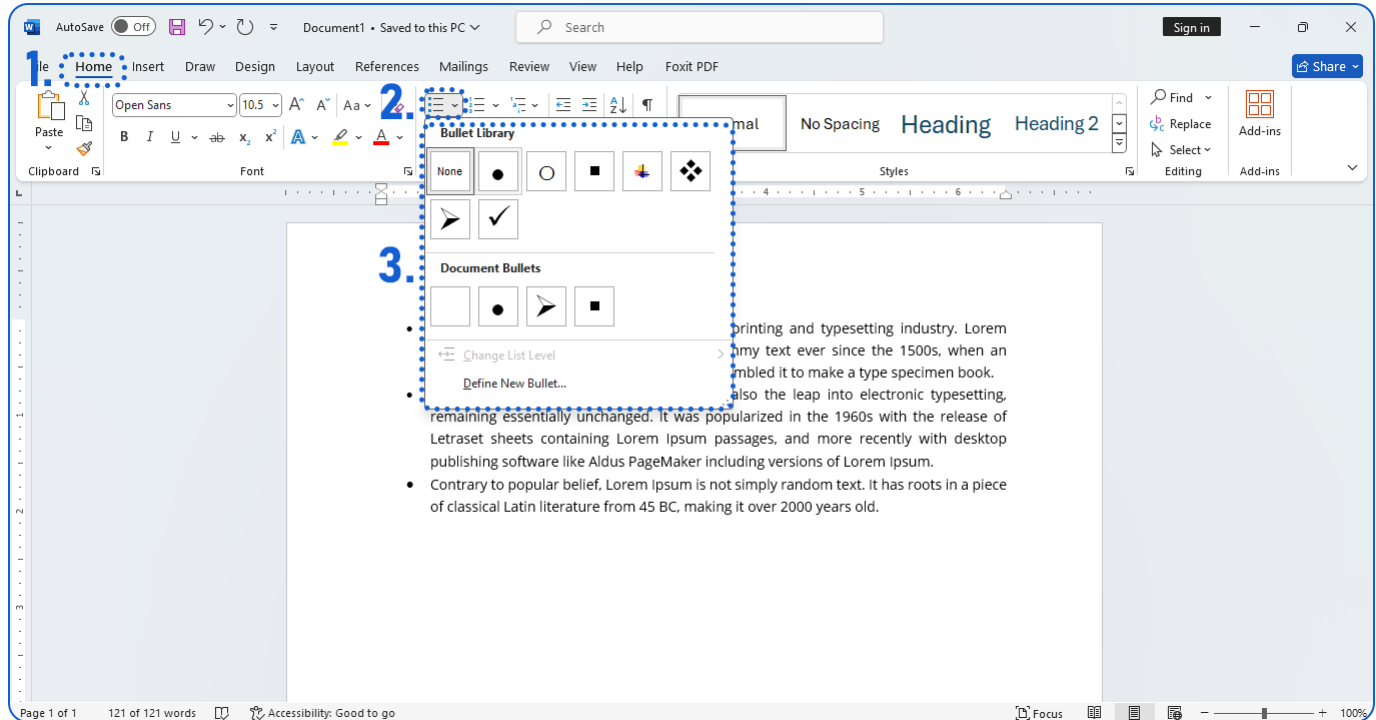
## 6. Inserting Images and Shapes

1. Click on the **Insert** Tab.
2. In the **Illustration** section, you have different options like inserting an image, inserting shaped and other options.



## 7. Inserting Bullets and Numbering

1. Select your text on which you want to apply bullets and numbering.
2. Click on the **Home** tab.
3. In the **Paragraph** section, click on the **bullet** icon to apply bullets on the select text.
4. Similarly, click on the **numbering** icon to apply number on your text.
5. You can also create intended bullets and numbering.



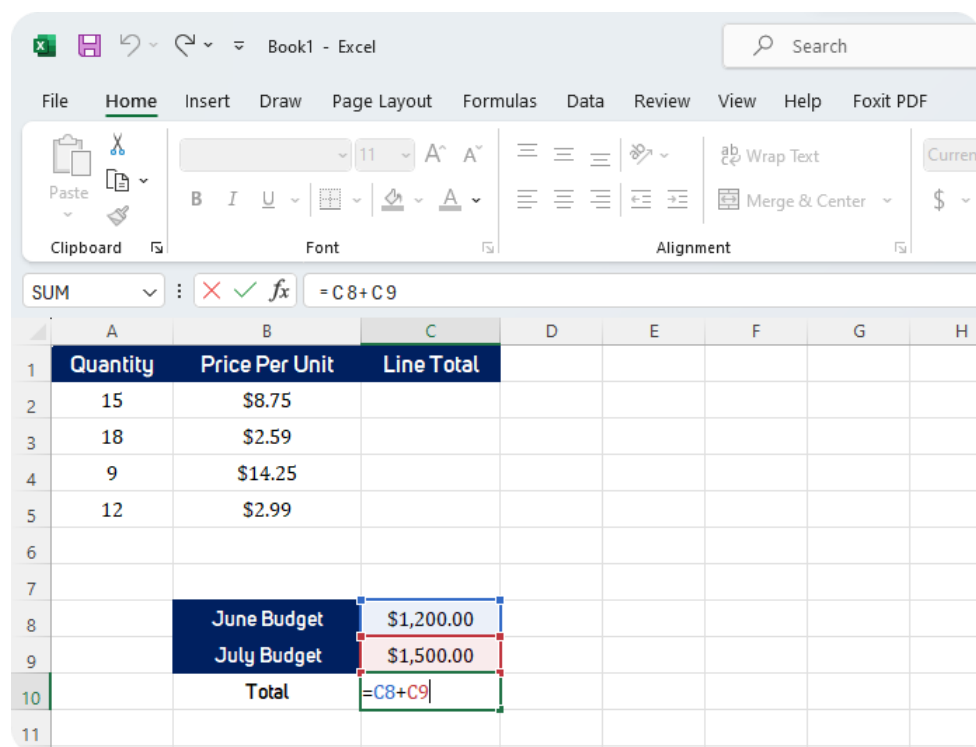
## 8. Introduction to Formulas in MS Excel

Excel uses standard operators for formulas: a plus sign for addition (+), minus sign for subtraction (-), asterisk for multiplication (\*), forward slash for division (/), and caret (^) for exponents

Operation	Operator/Symbol	Formula	Description
Addition	+	=A1 + A2	Adds cells A1 & A2
Subtraction	-	=C4-3	Subtracts 3 from cell C4
Multiplication	*	E7/J4	Divides cell E7 by J4
Division	/	=N10*1.05	Multiplies cell N10 by 1.05
Exponents	^	R5^2	Finds the square of cell R5

## 9. Create Formula

1. Select the cell that will contain the formula. In our example, we'll select cell **C10**.
2. Type the equals sign (=). Select cell addresses you want to add. Type the mathematical operator you want to use. In our example, we'll type the addition sign (+).



	A	B	C	D	E	F	G	H
1	Quantity	Price Per Unit	Line Total					
2	15	\$8.75						
3	18	\$2.59						
4	9	\$14.25						
5	12	\$2.99						
6								
7								
8		June Budget	\$1,200.00					
9		July Budget	\$1,500.00					
10		Total	\$2,700.00					
11								

## 10.Functions

In order to work correctly, a function must be written a specific way, which is called the syntax. The basic syntax for a function is the equals sign (=), the function name (SUM, for example), and one or more arguments. Arguments contain the information you want to calculate. The function in the example below would add the values of the cell range **A1:A20**.

### 10.1 Creating a Function

There are a variety of functions available in Excel. Here are some of the most common functions you'll use:

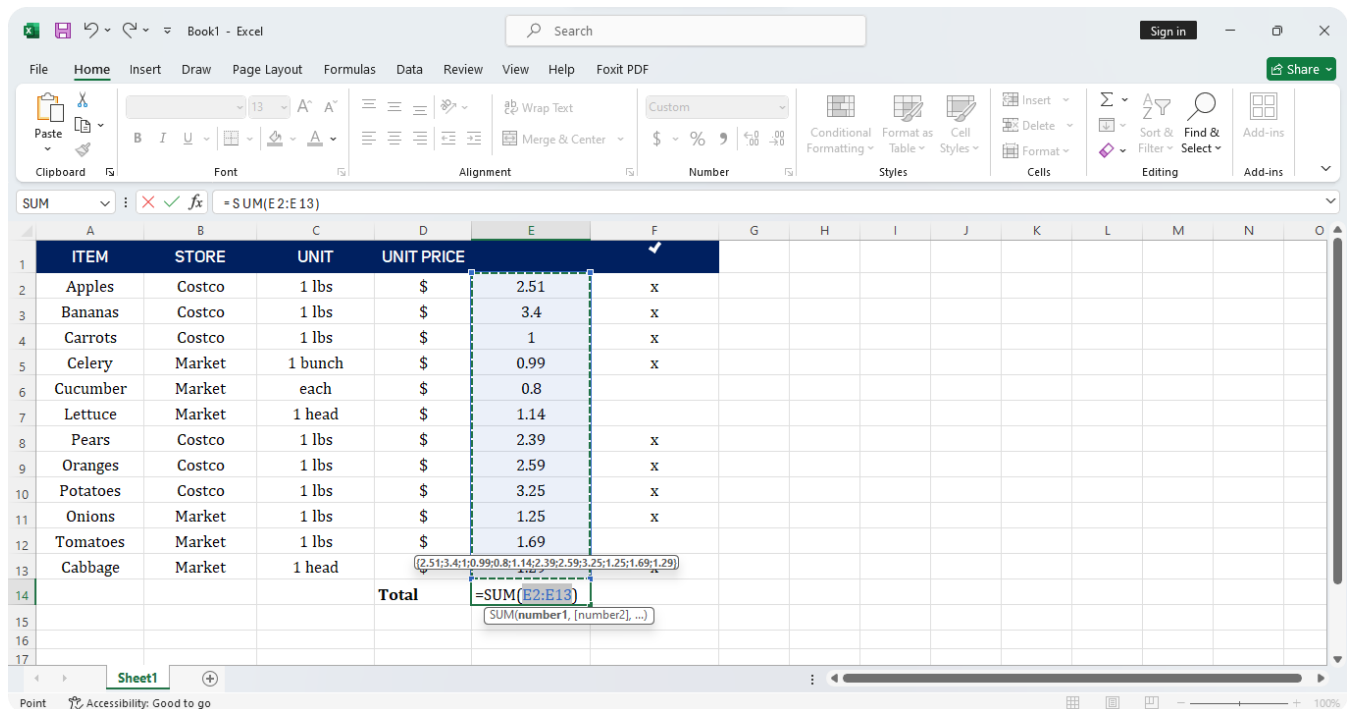
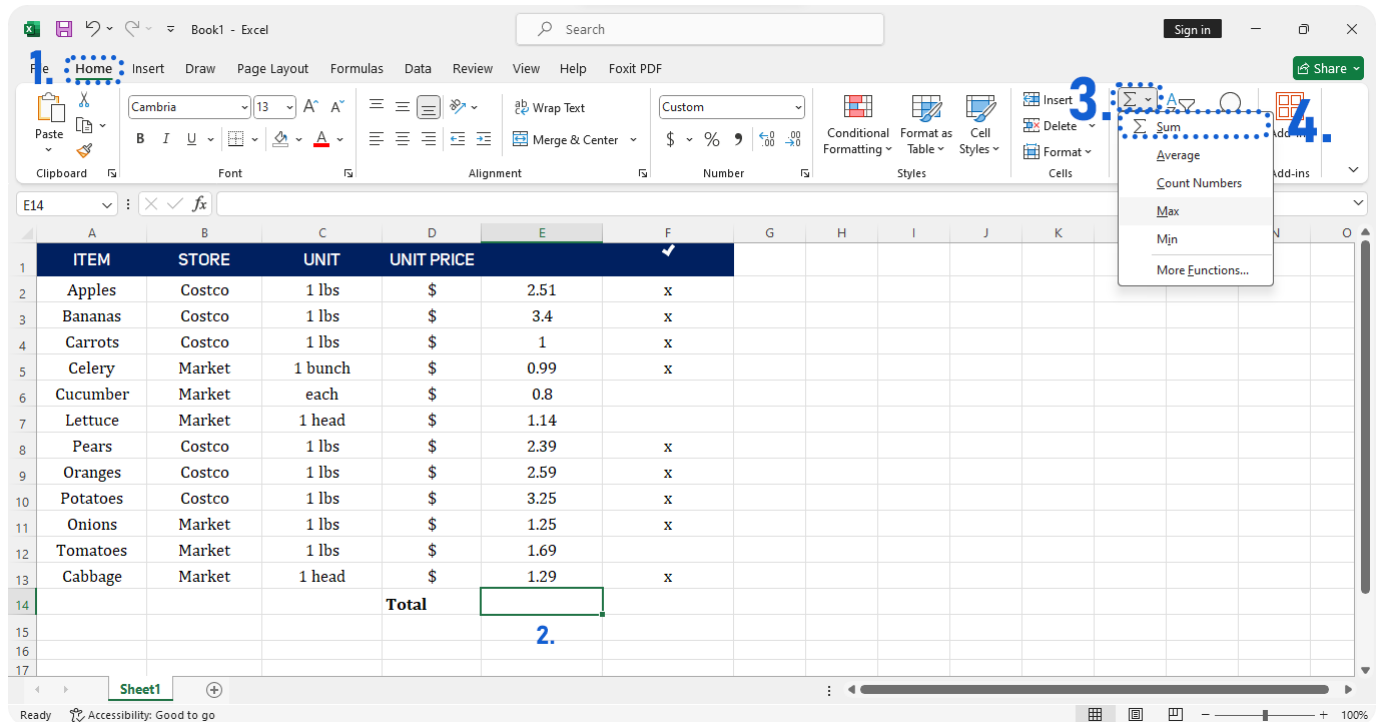
- SUM:** This function adds all of the values of the cells in the argument.
- AVERAGE:** This function determines the average of the values included in the argument. It calculates the sum of the cells and then divides that value by the number of cells in the argument.
- COUNT:** This function counts the number of cells with numerical data in the argument. This function is useful for quickly counting items in a cell range.
- MAX:** This function determines the highest cell value included in the argument.
- MIN:** This function determines the lowest cell value included in the argument.



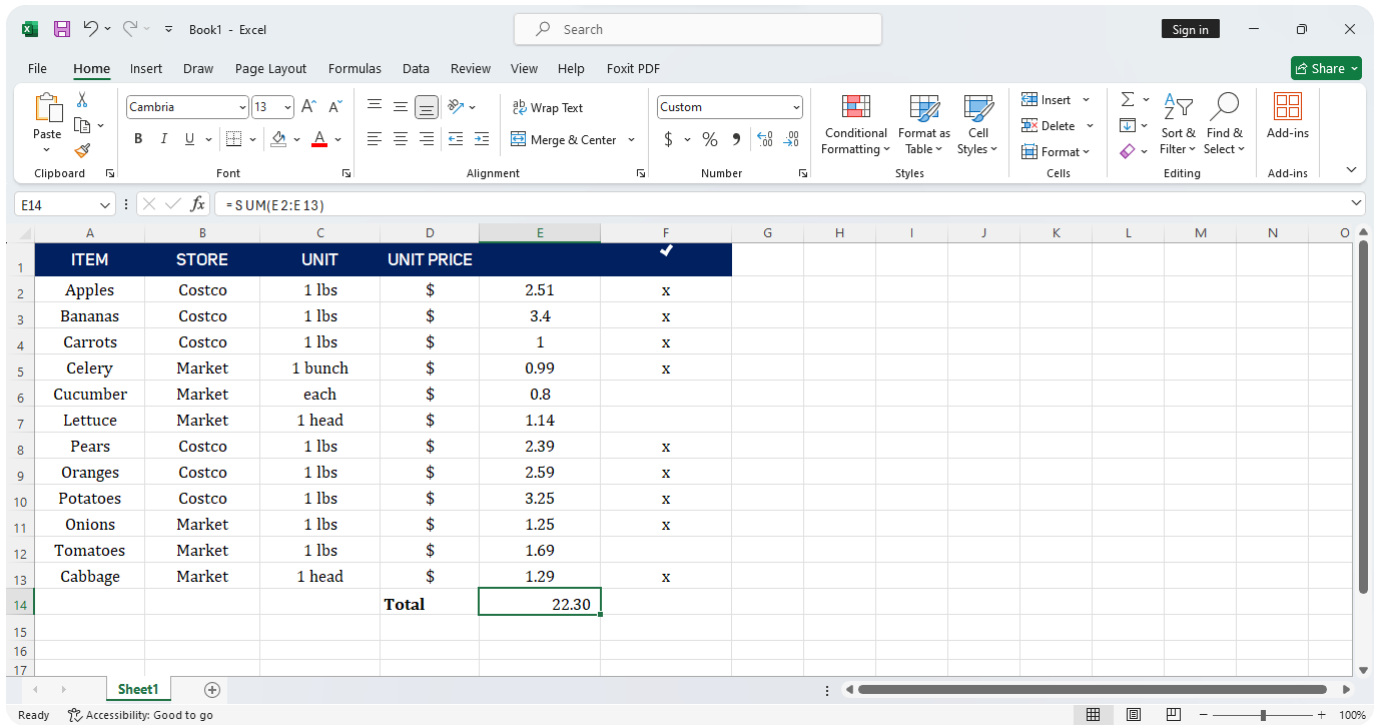
## 10.1 Creating a Function using the AutoSum Option

There are a variety of functions available in Excel. Here are some of the most common functions you'll use:

1. Click on the **Home** tab.
2. Select the cell that is below the numeric values you want to sum.
3. In the **Editing** group under the **Home** tab, click on the **summation** icon and then click on **Sum**.



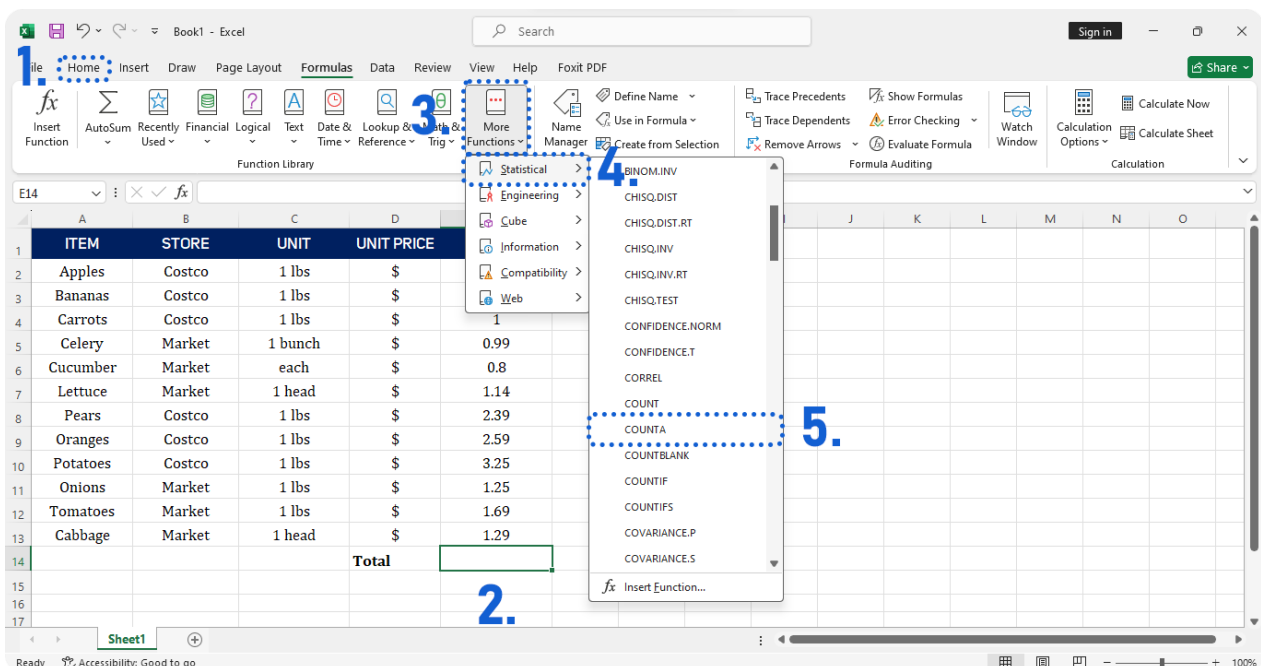
#### 4. Press Enter.



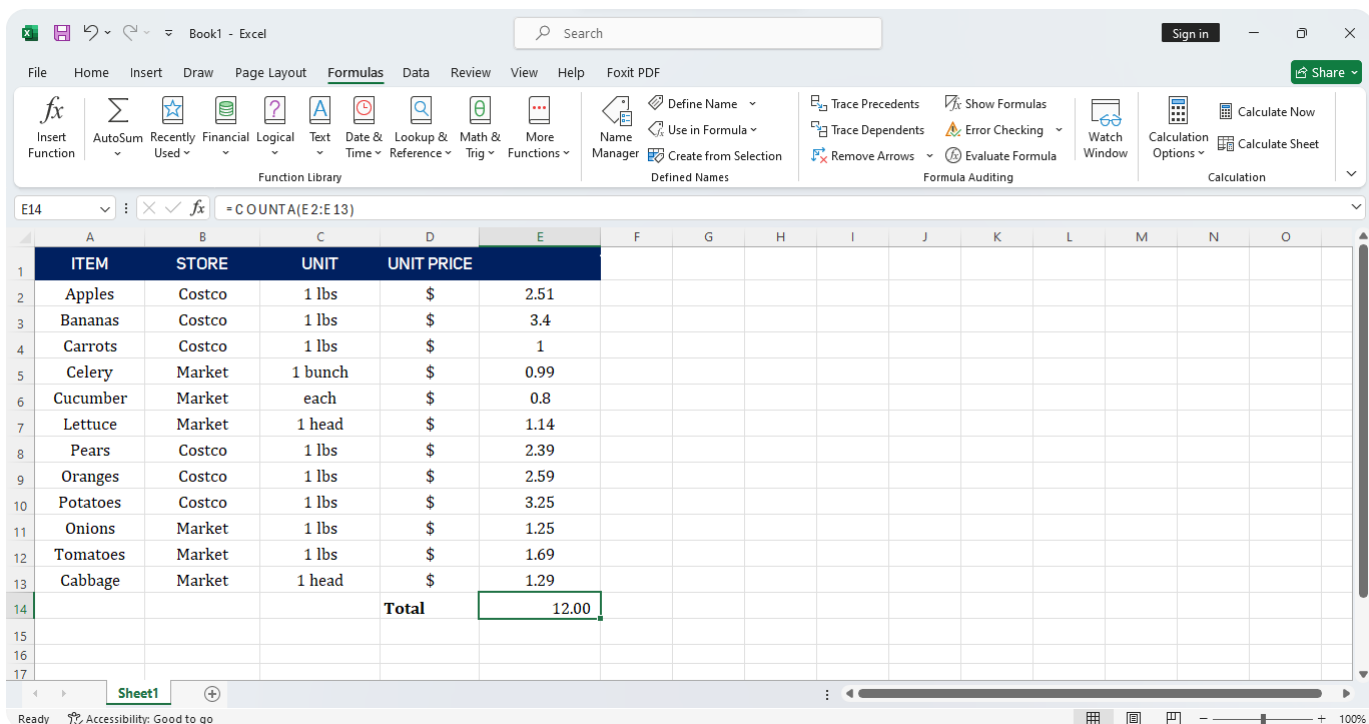
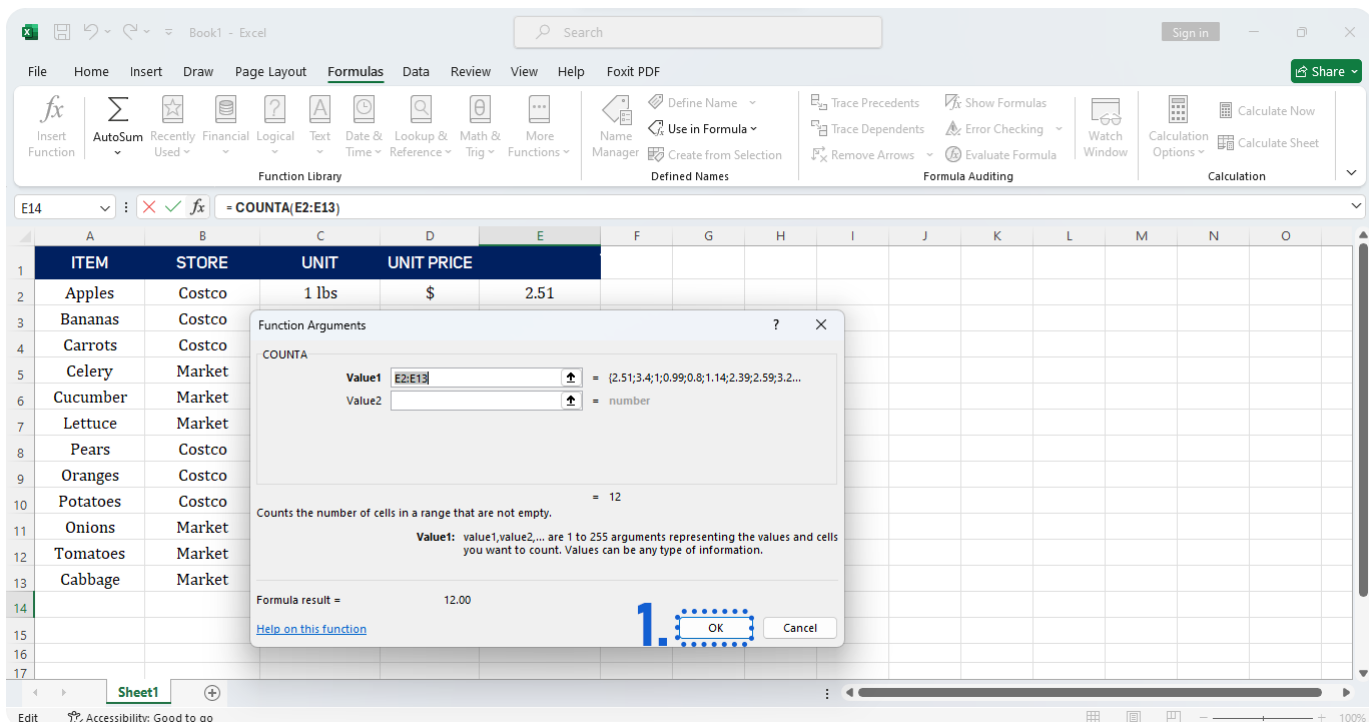
**Note:** The AutoSum option can also be accessed under the Formulas tab.

## 10.2 Inserting a Function from the Function Library

1. Click on the **Home** tab.
2. Click on the cell you want to apply the function. In our case it is **E14**.
3. In the **Function Library** section, click on **More Functions**. A drop-down menu will appear.
4. Click on **Statistical**. Now click on **COUNTA**. (This function will count the non-empty cells.)



5. The **Function Arguments** window will appear. The range will automatically be selected.
6. Click on **OK**.



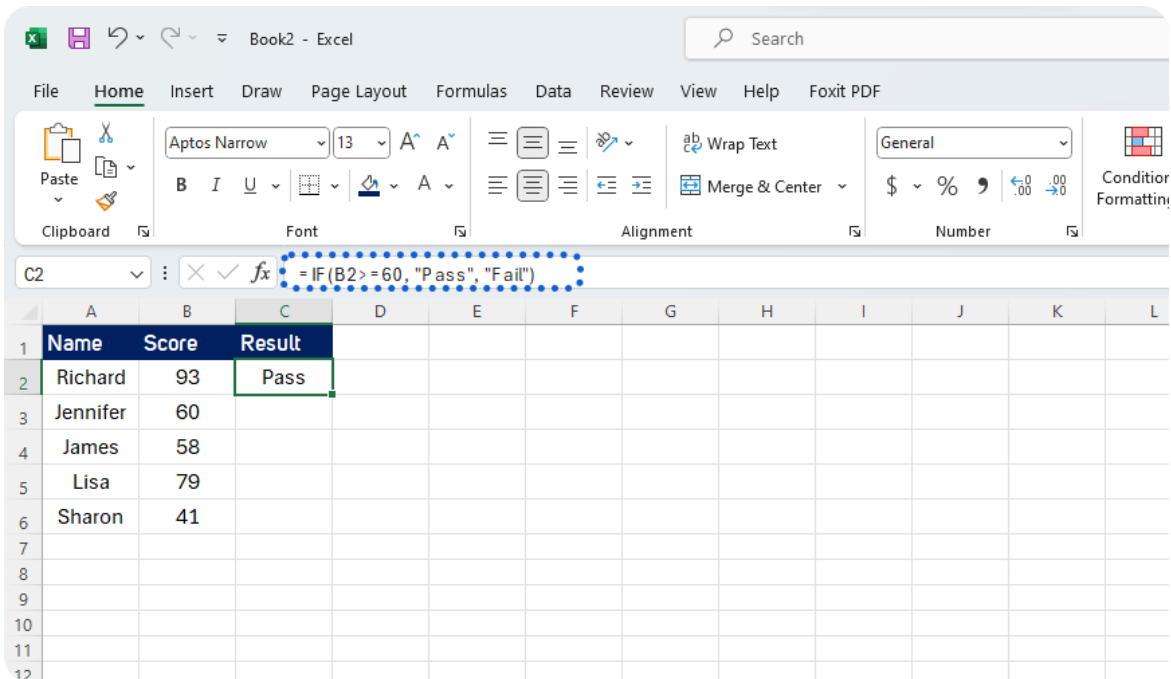
Hence, the items added to the cart are **12**.

## 11. Logical Functions

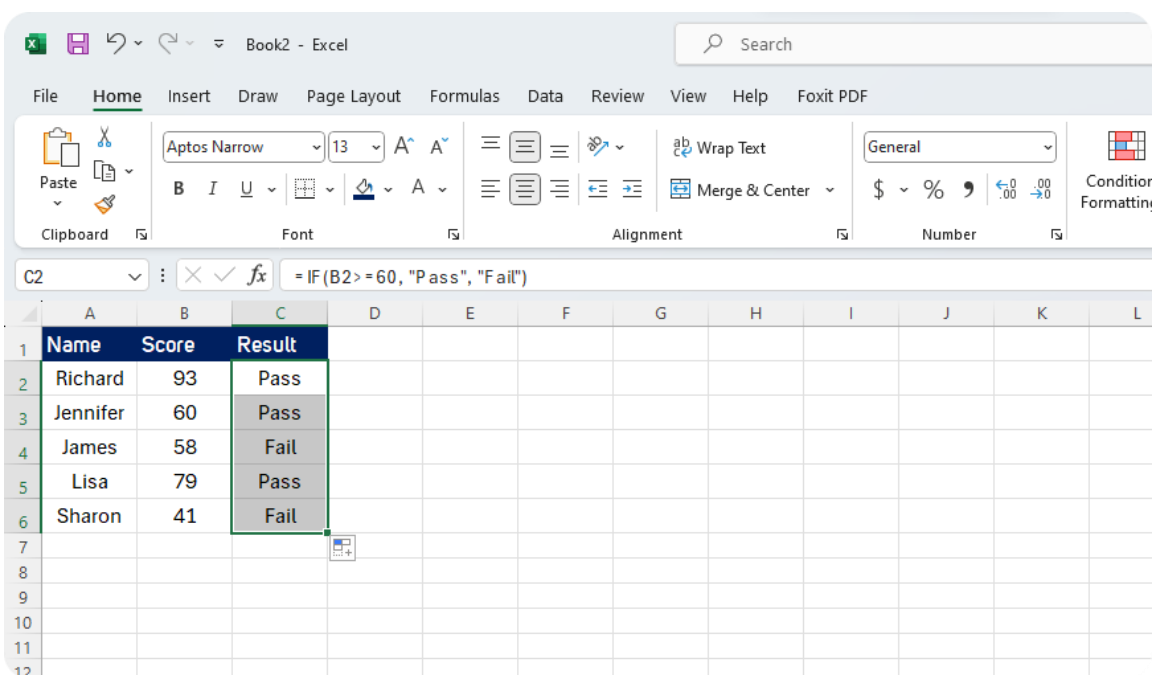
### 11.1 IF

The **IF** function checks whether a condition is met, and returns one value if true and another value if false.

For example, take a look at the **IF** function in cell **C2** below:

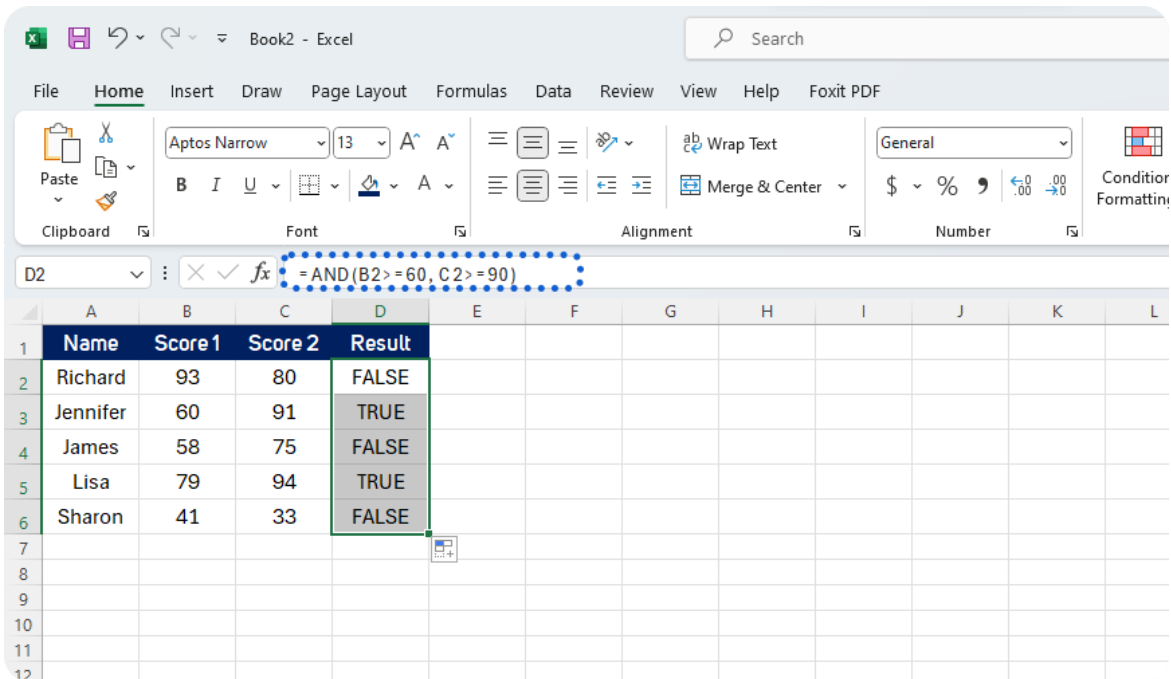


Now, drag the handle (the **+** sign at the bottom-right corner of the selected cell) to all the cells to apply the same formula to other values of **Score**.



## 11.2 AND

The **AND** Function returns **TRUE** if all conditions are true and returns **FALSE** if any of the conditions are false.

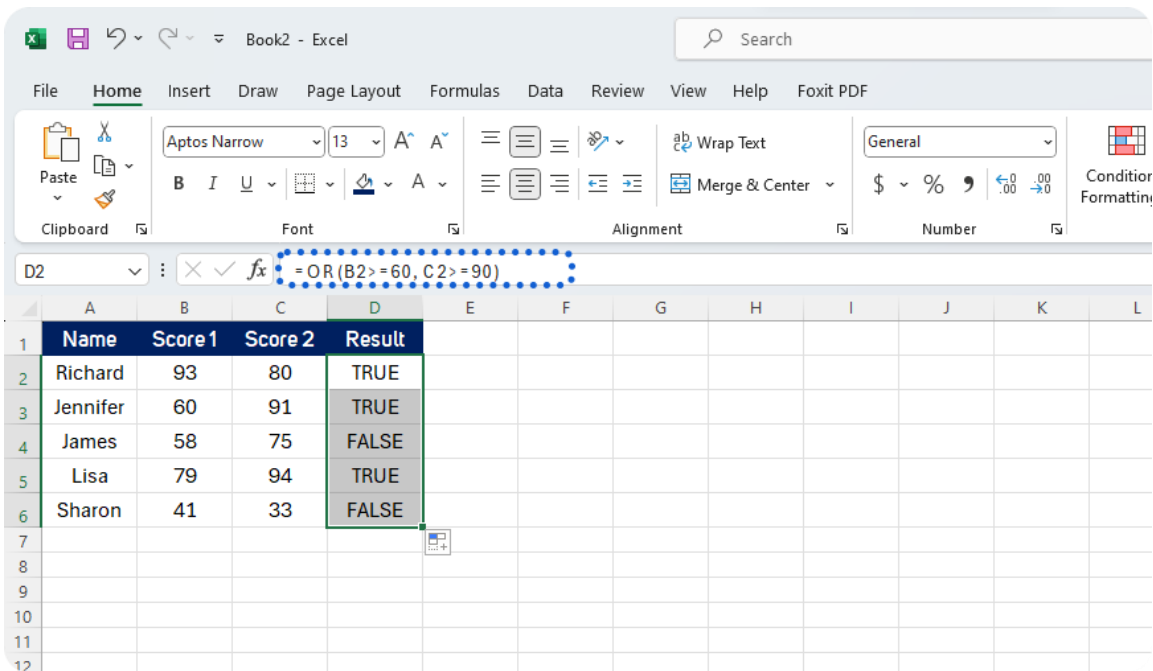


The screenshot shows the Microsoft Excel interface with the formula bar displaying `=AND(B2>=60, C2>=90)`. The worksheet contains a table with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Name	Score 1	Score 2	Result								
2	Richard	93	80	FALSE								
3	Jennifer	60	91	TRUE								
4	James	58	75	FALSE								
5	Lisa	79	94	TRUE								
6	Sharon	41	33	FALSE								
7												
8												
9												
10												
11												
12												

## 11.3 OR

The **OR** function returns **TRUE** if any of the conditions are **TRUE** and returns **FALSE** if all conditions are false.

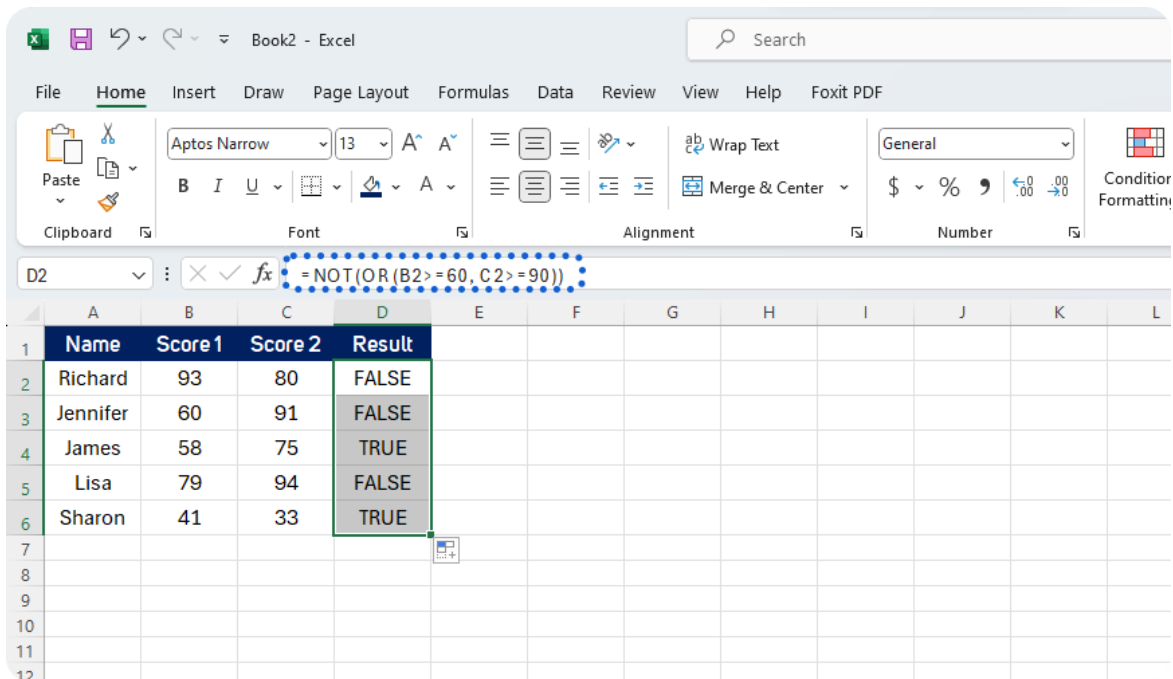


The screenshot shows the Microsoft Excel interface with the formula bar displaying `=OR(B2>=60, C2>=90)`. The worksheet contains a table with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Name	Score 1	Score 2	Result								
2	Richard	93	80	TRUE								
3	Jennifer	60	91	TRUE								
4	James	58	75	FALSE								
5	Lisa	79	94	TRUE								
6	Sharon	41	33	FALSE								
7												
8												
9												
10												
11												
12												

## 11.4 NOT

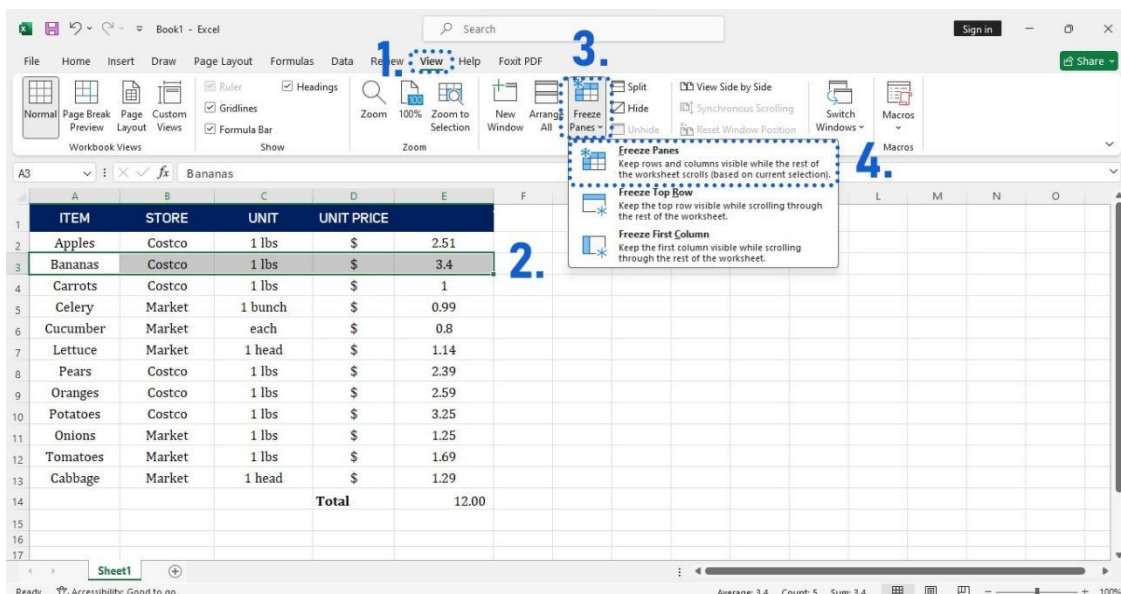
The **NOT** function changes **TRUE** to **FALSE**, and **FALSE** to **TRUE**.

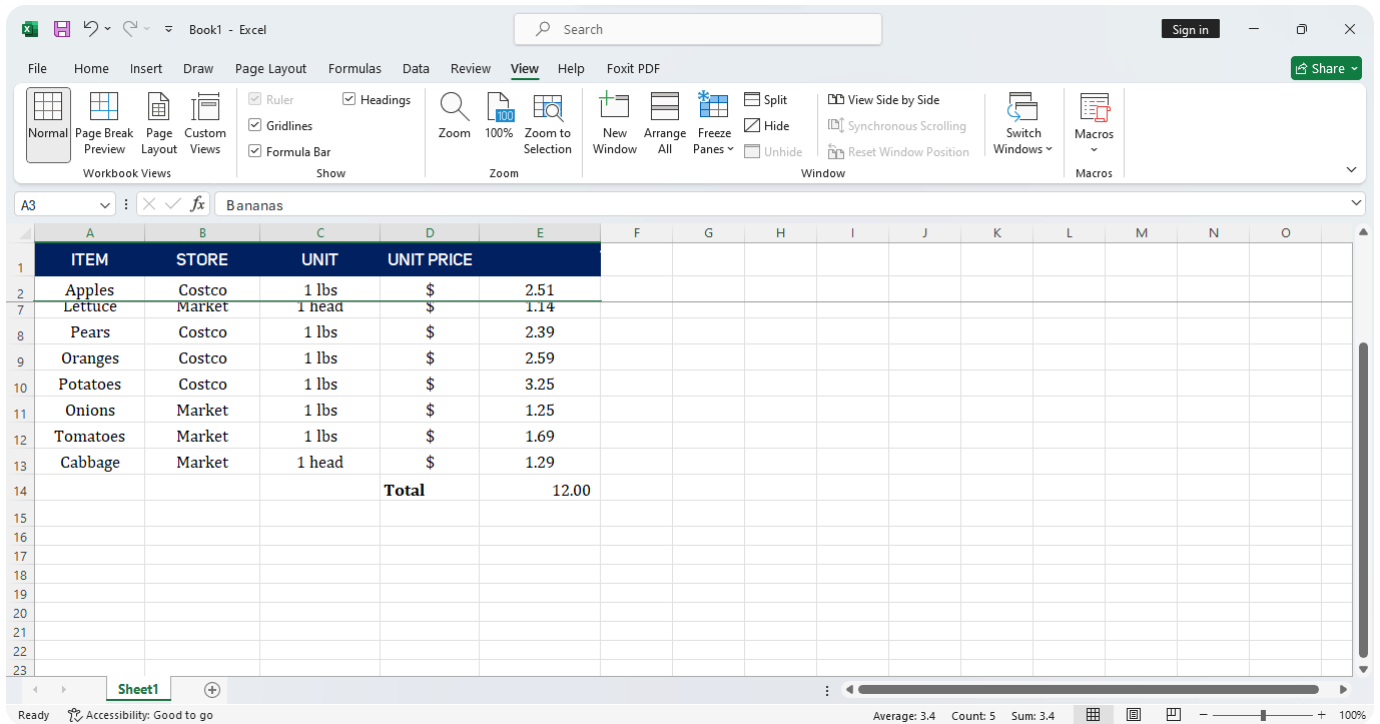


## 12. Freeze Rows

You may want to see certain rows or columns all the time in your worksheet, especially header cells. By freezing rows or columns in place, you'll be able to scroll through your content while continuing to view the frozen cells.

1. Click on the **View** tab.
2. To freeze the **first two rows**, (row 1 and 2) select the **3rd row** so that you can scroll all the rows except row 1 and 2.
3. Under the **Window** section, click on **Freeze Panes**.
4. In the drop-down menu, click on **Freeze Panes**.



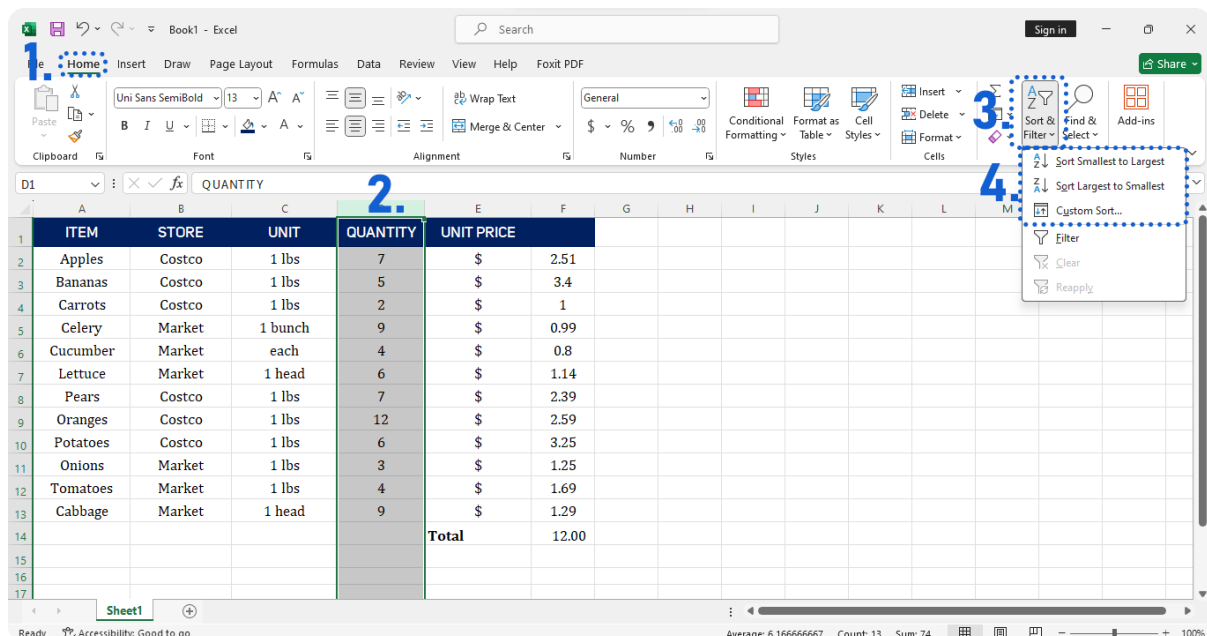


**Note: Do the same to freeze the Columns.**

**Note: To unfreeze panes, simply click on Unfreeze Panes.**

### 13. Sorting a Range

1. Click on the **Home** tab.
2. Select the column to sort.
3. In the **Editing** section, click on **Sort & Filter**.
4. You can sort from **Smallest to Largest**, **Largest to Smallest**, and **Custom Sort** based on your sorting criteria.
5. Select **Largest to Smallest** option to sort the data based on the **Quantity** column.



6. After this, the **Sort Warning** window will appear, click on **OK**.

Link: [Grocery Data](#)

Sort Warning

Microsoft Excel found data next to your selection. Since you have not selected this data, it will not be sorted.

What do you want to do?

☒ Expand the selection

☐ Continue with the current selection

1. Sort Cancel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	ITEM	STORE	UNIT	QUANTITY	UNIT PRICE										
2	Apples	Costco	1 lbs	7	\$	2.51									
3	Bananas	Costco	1 lbs	5											
4	Carrots	Costco	1 lbs	2											
5	Celery	Market	1 bunch	9											
6	Cucumber	Market	each	4											
7	Lettuce	Market	1 head	6											
8	Pears	Costco	1 lbs	7											
9	Oranges	Costco	1 lbs	12											
10	Potatoes	Costco	1 lbs	6	\$	3.25									
11	Onions	Market	1 lbs	3	\$	1.25									
12	Tomatoes	Market	1 lbs	4	\$	1.69									
13	Cabbage	Market	1 head	9	\$	1.29									
14					Total	12.00									

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	ITEM	STORE	UNIT	QUANTITY	UNIT PRICE										
2	Oranges	Costco	1 lbs	12	\$	2.59									
3	Celery	Market	1 bunch	9	\$	0.99									
4	Cabbage	Market	1 head	9	\$	1.29									
5	Apples	Costco	1 lbs	7	\$	2.51									
6	Pears	Costco	1 lbs	7	\$	2.39									
7	Lettuce	Market	1 head	6	\$	1.14									
8	Potatoes	Costco	1 lbs	6	\$	3.25									
9	Bananas	Costco	1 lbs	5	\$	3.4									
10	Cucumber	Market	each	4	\$	0.8									
11	Tomatoes	Market	1 lbs	4	\$	1.69									
12	Onions	Market	1 lbs	3	\$	1.25									
13	Carrots	Costco	1 lbs	2	\$	1									
14					Total	12.00									

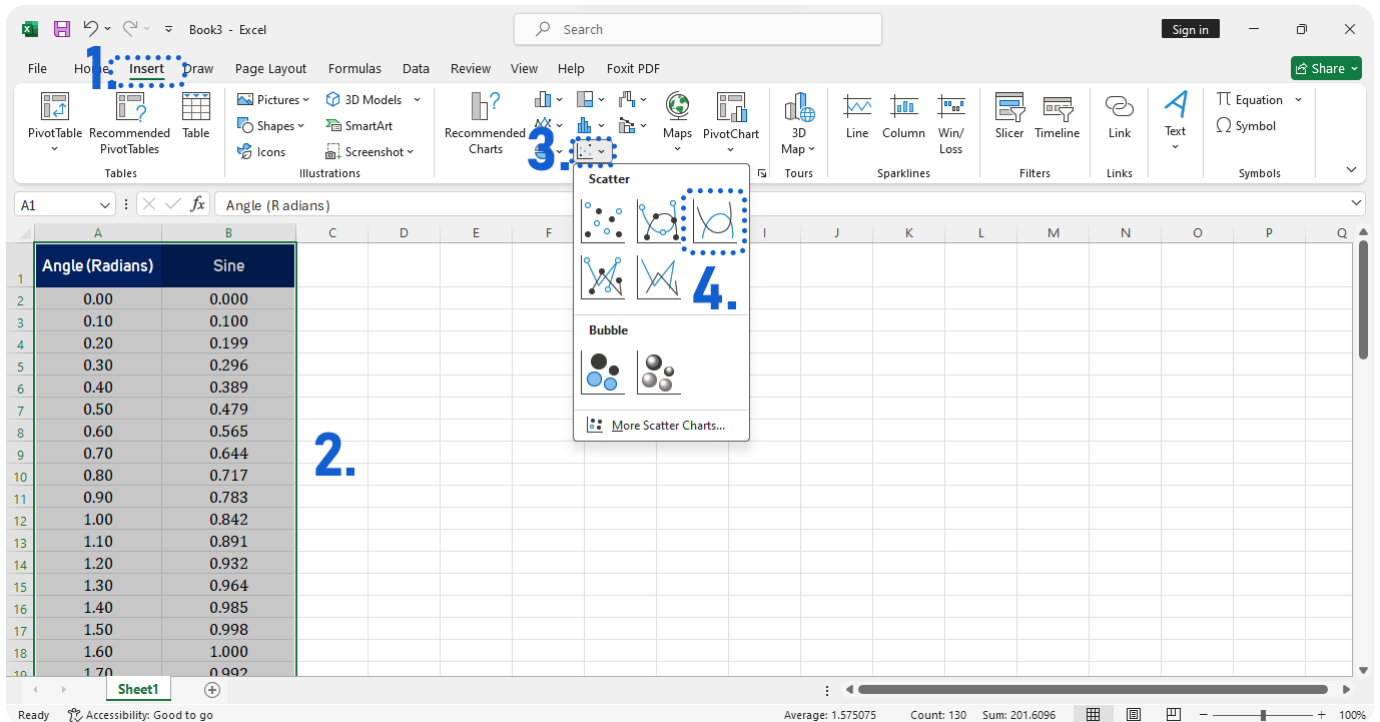


## 14. Charts in Excel

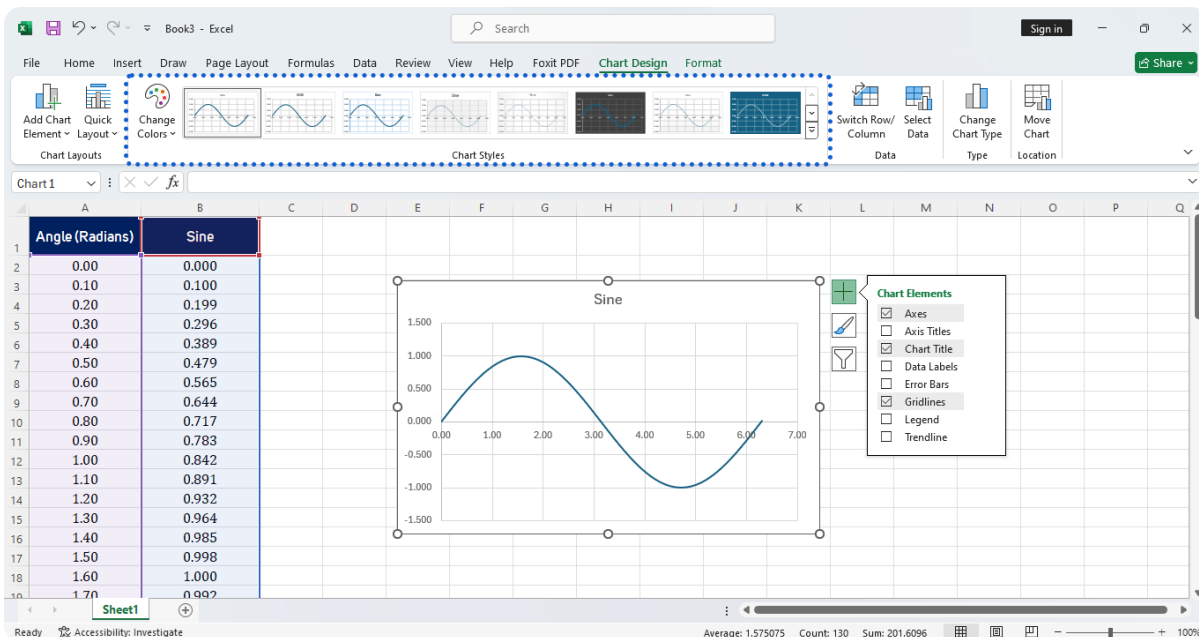
1. Click on the **Insert** tab.
2. Select the range(s) of data for which you want to create the chart. In this example, the data to create chart of a **Sine Wave** is used.

Link: [Sine Wave Data](#)

3. In the **Charts** section, click on the **Scatter Chart** icon.
4. Select the 3<sup>rd</sup> option to create a smooth line chart.



5. You can customize the **chart style**, charts element, chart title and many more.



## Lab Activity

### MS WORD: -

#### Question No 1:- Text Alignment and Formatting:

- a) Type a short paragraph about your favorite book.
- b) Change the font style to "Times New Roman" and the font size to 12pt.
- c) Apply italics to the entire paragraph.
- d) Align the paragraph to the center of the page.

#### Question No 2:- Inserting Shapes:

- a) Insert a shape (such as a rectangle) into the document.
- b) Resize the shape to a width of 30 inches and a height of 20 inches.
- c) Change the fill color of the shape to blue.
- d) Position the shape in the bottom right corner of the page.

#### Question No 3:- Applying Bullets:

- a) Create a list of three countries you would like to visit.
- b) Apply bullet points to the list.
- c) Change the bullet style to a check mark.
- d) Indent the list to the right by one level.

### MS Excel:-

#### Question No 1:- Auto Sum Function:

- a) Create a table with columns for "Expense Type" and "Amount."
- b) Enter sample data for five expenses with their corresponding amounts.
- c) Use the Auto Sum function to calculate the total amount of all expenses.

#### Question No 2:- Count Function:

- a) Create a table with a column for "Attendance" and mark the attendance of five students (use "Present" or "Absent").

b) Use the COUNTIF function to count the number of students marked as "Present."

c) Display the result in a separate cell labeled "Total Present." solutions of these

**Question No 3:-** Using the AVERAGE Function:

a) Create a table with columns for "Test" and "Score."

b) Enter sample data for five tests with their corresponding scores.

c) Use the AVERAGE function to calculate the average score of all tests.

d) Display the average score in a cell below the scores column.

**Question No 4:-** Create a Cosine graph in MS Excel.