

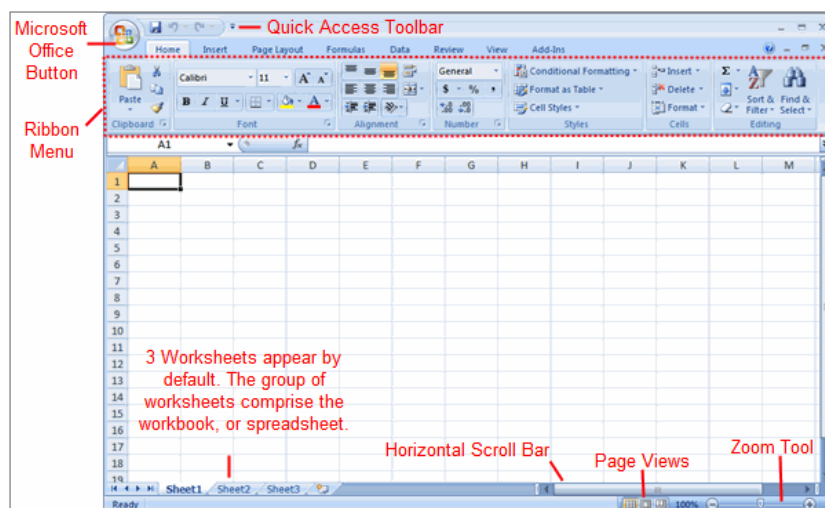
# Microsoft Office Excel

## Introduction

Microsoft Excel is a spreadsheet program that allows users to organize, analyze, and manipulate data. It is part of the Microsoft Office suite of applications. Excel is a grid of cells organized by lettered columns and numbered rows. This grid pattern allows for easy data manipulation and conversion of data into mathematical formulas.

## Opening MS Office Word 2007 on a PC

To launch Microsoft Excel 2007, go to Start > All Programs > Microsoft Office > Microsoft Excel 2007, A blank datasheet will open.



## To zoom in and out:

- Locate the **zoom bar** in the bottom-right corner.
- Left-click the **slider**, and **drag** it to the left to zoom out and to the right to zoom in.

## To scroll horizontally in a worksheet:

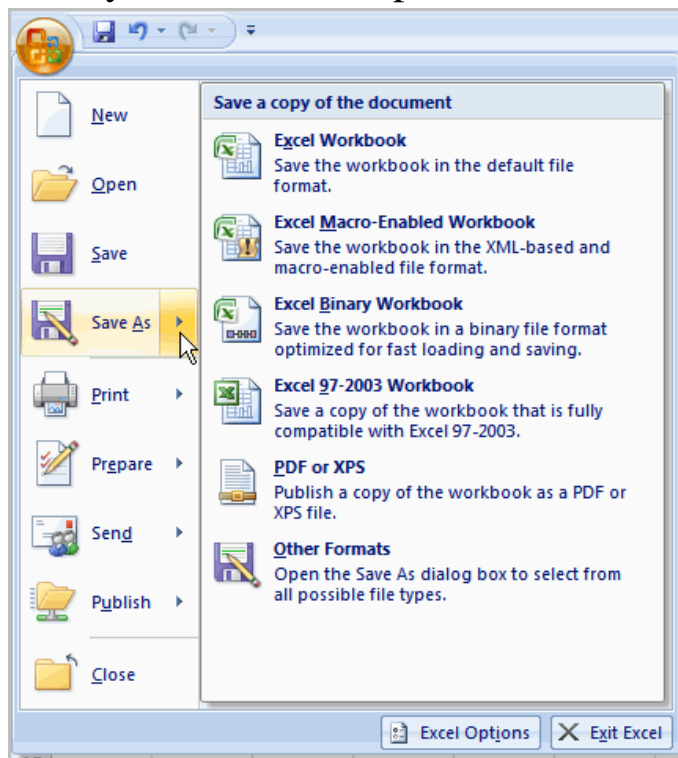
- Locate the **horizontal scroll bar** in the bottom-right corner.
- Left-click the bar, and move it from left to right.

## To change page views:

- Locate the **Page View options** in the bottom-right corner. Options are Normal, Page Layout, and Page Break.
- Left-click an option to select it.
- The default is **Normal View**.

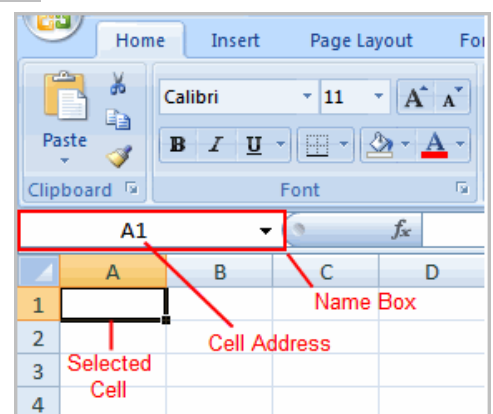
## ***The Microsoft Office button***

The **Microsoft Office button** appears at the top of the Excel window. When you left-click the button, a menu appears. From this menu, you can create a new spreadsheet, open existing files, save files in a variety of ways, and print. You can also add security features, send, publish, and close files.



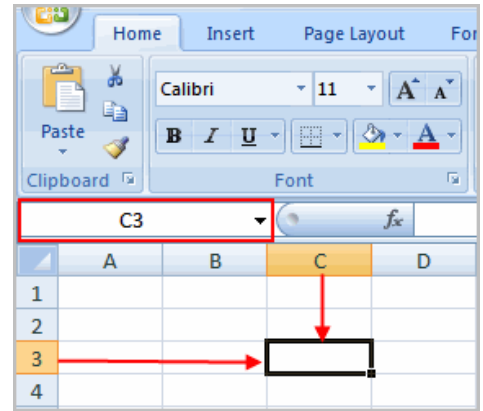
## ***To create a new blank workbook:***

- Left-click the **Microsoft Office button**.
- Select **New**. The New Workbook dialog box opens, and Blank Workbook is highlighted by default.
- Click **Create**. A new blank workbook appears in the window.



## ***To insert text:***

- Left-click a **cell** to select it. Each **rectangle** in the worksheet is called a **cell**. As you select a cell, the **cell address** appears in the **Name Box**.
- Enter **text** into the **cell** using your keyboard. The text appears in the cell and in the **formula bar**.



## ***Cell addresses:***

Each cell has a name, or a **cell address**, based on the **column** and **row** where it is located. For example, this cell is C3 because it is where column C and row 3 intersect.

## ***Cell Range:***

A range in Excel is a collection of cells. A range can be two or more cells, and the cells don't have to be adjacent to each other. A range is usually symmetrical (square), but can exist of separate cells.

To set a range, you enter the cell reference for the top left corner, then the bottom right corner. The range is made using those two as coordinates. For example, the range A1:E10 has the value of A1:E10.

## ***To move through a worksheet using the keyboard:***

- Press the **Tab** key to move to the **right** of the selected cell.
- Press the **Shift** key then the **Tab** key to move to the **left** of the selected cell.
- Use the **Page Up** and **Page Down** keys to navigate the worksheet.
- Use the arrow keys.

## ***To save the workbook:***

- Left-click the **Microsoft Office** button.
- Select **Save** or **Save As**.

### ***Save a workbook with password:***

- Open the file you want to protect.
- Select "**File**" and then "**Save as**".
- Select the "**Tools**" dropdown and choose "**Save options**".
- A prompt will appear asking you to enter a password to protect the file.
- Enter the password and click "**OK**".
- You will be prompted to enter the **password** again to confirm it.

### ***To insert a new worksheet:***

- Locate and select the **New sheet** button near the bottom-right corner of the Excel window.
- A new blank worksheet will appear.

By default, any new workbook you create in Excel will contain three worksheets.

### ***To delete a worksheet:***

- Right-click the **worksheet** you want to delete, then select **Delete** from the worksheet menu.
- The worksheet will be **deleted** from your workbook.

If you want to prevent specific worksheets from being edited or deleted, you can **protect them** by right-clicking the desired worksheet and selecting **Protect Sheet** from the worksheet menu.

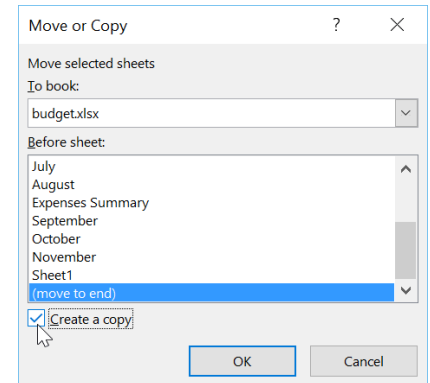
### ***To rename a worksheet:***

- Right-click the **worksheet** you want to rename, then select **Rename** from the worksheet menu.
- Type the **desired name** for the worksheet.
- Click anywhere outside the worksheet tab, or press **Enter** on your keyboard. The worksheet will be **renamed**.

### ***To copy or move a worksheet:***

If you need to **duplicate** the content of one worksheet to another, Excel allows you to **copy** an existing worksheet.

- Right-click the worksheet you want to copy, then select **Move or Copy** from the worksheet menu.
- The **Move or Copy** dialog box will appear.
- Choose the location at **to book** option.
- Choose the **sheet** you want to copy.
- **Check the box** next to **Create a copy**, then click **OK**.



### ***To move a worksheet:***

- Click and drag the worksheet you want to move until a **small black arrow** appears above the desired location.
- Release the mouse. The worksheet will be moved.

### ***To change the worksheet tab color:***

- Right-click the desired worksheet tab, and hover the mouse over **Tab Color**. The **Color** menu will appear.
- Select the desired **color**.
- The worksheet tab color will be **changed**.

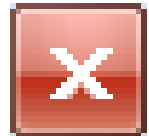
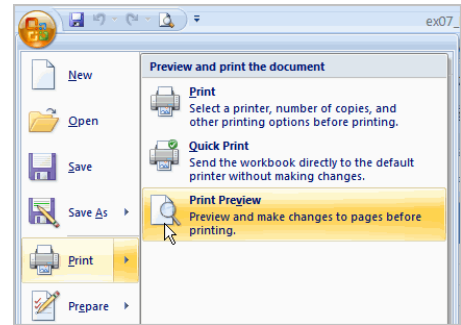
### ***Hide or Unhide worksheets:***

- Right-click the sheet tab you want to hide, or any visible sheet if you want to unhide sheets.
- On the menu that appears, do one of the following:
- To hide the sheet, select **Hide**.
- To unhide hidden sheets, select them in the Unhide dialog that appears, and then select **OK**.

# Printing:

## To view the spreadsheet in Print Preview:

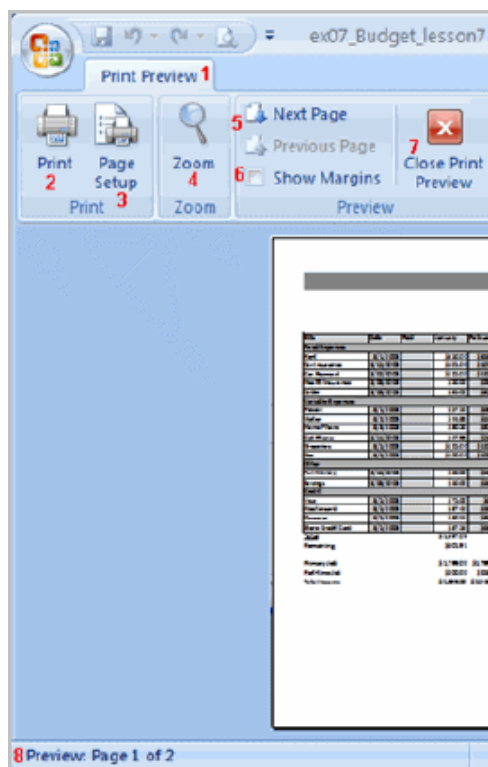
- Left-click the **Microsoft Office** button.
- Select **Print**.
- Select **Print Preview**. The spreadsheet will appear in Print Preview view.
- Click the **Close Print Preview** button to return to the Normal View.



To make previewing your spreadsheet easier, add the **Print Preview** command to the Quick Access toolbar.

## Exploring Print Preview

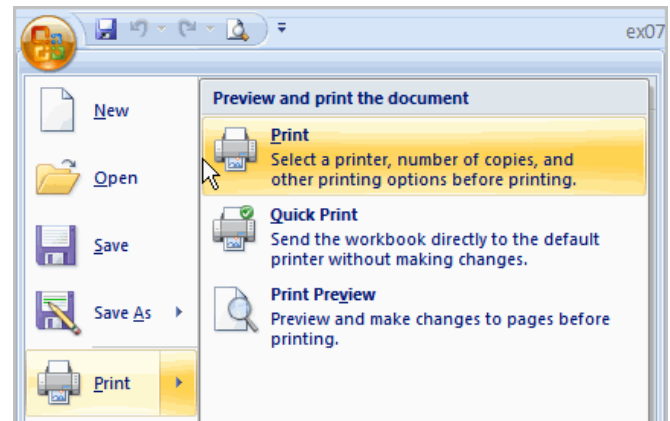
Once you are in Print Preview, you can access many of the same features that you can access from the Ribbon; however, in Print Preview you can see how the spreadsheet will appear in printed format.



1. Tab indicates you are in Print Preview mode.
2. Provides you with the same print dialog box you can access from the Microsoft Office Button.
3. From here you can access many of the same options that are available from the Ribbon, such as Page Orientation and Scaling.
4. Toggles between zooming in and out of the spreadsheet.
5. Use these commands to move between the pages.
6. View and edit margin markers.
7. Close current view and return to spreadsheet.
8. Indicates number of pages and which page you are currently viewing.

## ***To print from the Microsoft Office button:***

- Left-click the **Microsoft Office button**.
- Select **Print**
- Select a printer if you wish to use a printer other than the default setting.
- Click **Properties** to change any necessary settings.
- Choose whether you want to print specific pages, all of the worksheet, a selected area, the active sheet, or the entire workbook.
- Select the number of copies you'd like to print.
- Click **OK**.



## ***Home Tab:***

### ***Clipboard Group:***

The Clipboard is a holding place on your computer where you can temporarily store data (text, pictures, and so on). When you copy something, your selection is held on the Clipboard, where it remains until you copy something else or shut down your computer.

It has four options- Paste, Cut, Copy and Format Painter.

### ***Copy:***

Select the text you want to copy and press Ctrl+C.

### ***Cut:***

The Cut feature allows you to remove selected text from the document and temporarily place it on the Office Clipboard.

### ***Paste:***

Place your cursor where you want to paste the copied text and press Ctrl+V.

### ***Format Painter:***

You can use the Format Painter on the Write tab to apply text formatting and some basic graphics formatting, such as borders and fills.

- On the **Home tab**, in the **Clipboard group**, click **Format Painter**. The pointer changes to a paint brush icon.
- To stop formatting, press **ESC**.

Note: Double-click the Format Painter button if you want to change the format of multiple selections in your document.

### ***Font:***

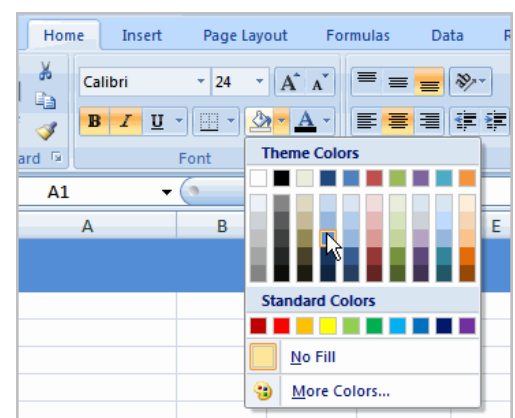
It has the following options – Font Face, Font Size, Grow Font, Shrink Font, Bold, Italic, Underline, Strikethrough, Sub Script, Super Script, Change Case, Border option, Fill color and Font Color.

### ***To add a border:***

- Select the cell or cells you want to format.
- Click the **drop-down arrow** next to the **Borders** command on the Home tab. A menu will appear with border options.
- Left-click an option from the list to select it.

### ***To add a fill color:***

- Select the cell or cells you want to format.
- Click the **Fill command**. A color palette will appear.
- Select a color.



### ***Alignment Group:***



## ***1. Horizontal Alignment:***

- Left Align: Aligns the content to the left within the cell.
- Center Align: Aligns the content to the center within the cell.
- Right Align: Aligns the content to the right within the cell.

## ***2. Vertical Alignment:***

- Top Align: Aligns the content to the top of the cell.
- Middle Align: Aligns the content in the middle of the cell.
- Bottom Align: Aligns the content to the bottom of the cell.

## ***3. Text Orientation:***

- Rotate Text Up: Rotates the text in the cell up.
- Rotate Text Down: Rotates the text in the cell down.
- Orientation: Allows you to specify a custom angle for text orientation.

## ***4. Wrap Text:***

- Wrap Text: Wraps the text within the cell, displaying it on multiple lines if needed to fit the column width.

## ***5. Shrink to Fit:***

- Shrink to Fit: Shrinks the text to fit within the cell width while maintaining the font size.

## ***6. Merge & Center:***

- Merge & Center: Merges the selected cells and centers the text within the merged cell.

## ***Number Group:***

## ***Number Format:***

The "Number Format" dropdown allows you to select various pre-defined number formats such as General, Number, Currency, Accounting, Date, Time, Percentage, Fraction, Scientific, and more.

## ***Number Styles:***

Comma Style: Adds a comma as a thousand separator and displays two decimal places.

Increase Decimal: Increases the number of decimal places displayed for the selected cell(s).

Decrease Decimal: Decreases the number of decimal places displayed for the selected cell(s).

## ***Currency and Percentage:***

Currency: Applies currency formatting to the selected cell(s).

Percentage: Formats the selected cell(s) as a percentage.

## ***Date and Time:***

Short Date: Formats the selected cell(s) with a short date format.

Long Date: Formats the selected cell(s) with a long date format.

Time: Formats the selected cell(s) with a time format.

## ***Styles Group:***

### **1. Cell Styles:**

- **Cell Styles:** This button opens a dropdown menu with a wide range of predefined cell styles, each with a combination of formatting options including font color, fill color, borders, and more.

### **2. Cell Style Dialog Box Launcher:**

- Clicking this small square icon in the bottom right corner of the "Cell Styles" group opens the "Style" dialog box. Here, you can create, modify, or delete custom cell styles.

### 3. Conditional Formatting:

- **Conditional Formatting:** This option opens a dropdown menu that allows you to apply conditional formatting rules to the selected cells based on specified criteria. This is useful for highlighting data that meets certain conditions.

### 4. Format as Table:

- **Format as Table:** This option converts the selected range of cells into a table with a pre-defined format. Tables make it easier to sort, filter, and analyse data.

### 5. Cell Styles (individual styles):

- Below the "Cell Styles" button, you'll see a set of individual style thumbnails that represent specific pre-defined styles. Examples include "Normal," "Bad," "Good," "Currency," etc. These styles provide a quick way to format cells with common formats.

## ***Cells Group:***

#### 1. Insert:

- **Insert Cells:** Allows you to insert cells, rows, or columns within a selected range.
- **Insert Sheet Rows/Columns:** Adds rows or columns to the worksheet.

#### 2. Delete:

- **Delete Cells:** Allows you to delete cells, rows, or columns from a selected range.
- **Delete Sheet Rows/Columns:** Removes rows or columns from the worksheet.

### 3. Format:

- **Row height**
- **Column width**
- **Hide:** Conceals the selected rows, columns, or cells.
- **Unhide:** Reveals any hidden rows, columns, or cells.
- **Organize sheet**
  1. Rename Sheet
  2. Move or copy sheet
  3. Tab color
- **Protect sheet**

## ***Editing Group:***

### 1. AutoSum:

- **AutoSum:** Automatically adds up the numbers in the selected range and suggests a sum formula. The sum is often a common calculation for a range of cells.

### 2. Fill:

- **Fill Down:** Copies the content from the cell above into the selected cell(s).
- **Fill Right:** Copies the content from the cell to the left into the selected cell(s).
- **Fill Up:** Copies the content from the cell below into the selected cell(s).
- **Fill Left:** Copies the content from the cell to the right into the selected cell(s).
- **Flash Fill:** Automatically fills values in adjacent cells based on patterns it recognizes in the data.

### 3. Clear:

- **Clear All:** Removes all content (data, formatting, comments) from the selected cells.
- **Clear Formats:** Removes formatting (font, color, border) from the selected cells.
- **Clear Contents:** Removes the contents (data) from the selected cells while keeping the formatting intact.

### 4. Editing Tools:

- **Find & Select:** Allows you to find specific content within the worksheet and provides options to replace or go to cells.
- **Replace:** Opens the "Find and Replace" dialog box, enabling you to replace specific content with other content.

## ***Insert Tab***

The "Insert" tab in Microsoft Excel 2007 offers an array of powerful tools to enrich your worksheets by allowing the insertion of various elements. Each option serves a unique purpose, enabling efficient data visualization, analysis, and organization.

### ***1. Table (Ctrl+T):***

#### ***Description:***

The "Table" option helps convert a selected range of data into a formatted table. This feature provides dynamic ranges, automatic formatting, and enhanced data management capabilities.

#### ***Process:***

1. **Select Data:** Highlight the data range you wish to convert into a table.
2. **Insert Table:** Navigate to the "Insert" tab and click on the "Table" button.

3. **Verify Data Range:** Ensure the selected range is correct in the "Create Table" dialog box.
4. **Include Headers:** Check the box if your data range includes headers.
5. **Create Table:** Click "OK" to create the table.

## ***2. PivotTable (Alt, NV):***

### ***Description:***

The "PivotTable" option allows for the analysis and summarization of large amounts of data in a cross-tabular format. It provides a dynamic way to view and explore complex data sets.

### ***Process:***

1. **Select Data:** Choose the data range you want to analyze.
2. **Insert PivotTable:** Access the "Insert" tab and click on the "PivotTable" button.
3. **Choose Placement:** Decide whether to place the PivotTable in an existing or new worksheet.
4. **Drag and Drop Fields:** Drag and drop fields into appropriate areas (Rows, Columns, Values) to analyze data effectively.

## ***3. Chart (Alt, NC):***

### ***Description:***

"Chart" enables the creation of visual representations of data using various chart types like bar charts, pie charts, line charts, etc. It helps in presenting data in an easily understandable format.

### ***Process:***

1. **Select Data:** Highlight the data you want to visualize.

2. **Insert Chart:** Access the "Insert" tab and click on the "Chart" button.
3. **Choose a Chart Type:** Select a chart type based on your data.
4. **Customize Chart:** Customize the chart as per your data and preferences.

## ***4. Sparklines:***

### ***Description:***

"Sparklines" are miniaturized charts that provide a visual representation of data trends within individual cells. They help in quickly analyzing data patterns.

### ***Process:***

1. **Select Cells:** Highlight the cells where you want to insert sparklines.
2. **Insert Sparklines:** Click on the "Sparklines" button in the "Insert" tab.
3. **Choose Sparkline Type:** Select the type of sparkline (line, column, or win/loss).
4. **Select Data Range:** Specify the data range for the sparklines.

## ***5. Hyperlink (Ctrl+K):***

### ***Description:***

The "Hyperlink" option allows for the insertion of links to web pages, email addresses, files, or other locations within the workbook. This enhances navigation and interactivity within the spreadsheet.

### ***Process:***

1. **Select Cell:** Choose the cell where you want to insert the hyperlink.
2. **Insert Hyperlink:** Click on the "Hyperlink" button in the "Insert" tab.
3. **Enter Link Details:** Enter the link address and optional display text.

## ***6. Text (Alt, N, T):***

### ***Description:***

The "Text" option enables the insertion of a text box where you can enter and format text. It's useful for adding explanatory text, comments, or labels to your worksheet.

### ***Process:***

1. **Insert Text Box:** Click on the "Text Box" option in the "Insert" tab.
2. **Draw Text Box:** Click and drag to draw the text box on the worksheet.
3. **Enter Text:** Type the desired text into the text box.

Continued in the next part...

## ***7. Header & Footer:***

### ***Description:***

The "Header & Footer" option allows you to insert headers and footers into the worksheet, which are useful for page layout and printing purposes.

### ***Process:***

1. **Access Header & Footer:** Click on "Header & Footer" in the "Insert" tab.
2. **Design Header & Footer:** Enter desired text and formatting in the header and footer areas.
3. **Close Header & Footer:** Click "Close Header and Footer" when you've completed the design.

## ***8. Symbols:***

### ***Description:***



The "Symbols" option provides access to a variety of symbols and special characters that can be inserted into cells, enhancing the presentation of data.

### ***Process:***

1. **Insert Symbol:** Click on the "Symbols" button in the "Insert" tab.
2. **Choose a Symbol:** Select the symbol you want to insert and click "Insert".

## ***Page Layout Tab:***

### ***Themes:***

Themes are predefined combinations of colors, fonts, and effects that can be applied to your worksheet to give it a consistent and appealing appearance.

### ***Page Setup:***

**Margins:** Allows you to adjust the margins of the page (how much space is left blank around the edges of the printed area).

**Orientation:** Choose between portrait (vertical) or landscape (horizontal) orientation for the printed page.

**Size:** Set the paper size for printing, such as letter, legal, A4, etc.

**Print Area:** Define a specific range of cells that will be printed.

### ***Scale to Fit:***

**Width and Height:** Adjust the width and height of the printed output by specifying a percentage.

**Scale:** Scale the worksheet to fit on a specified number of pages.

**Page Breaks:** Insert manual page breaks.

### ***Sheet Options:***

**Gridlines:** Toggle the display of gridlines on the printed page.

Headings: Toggle the display of row and column headings on the printed page.

Formulas: Toggle the display of formulas instead of formula results on the printed page.

## ***Arrange:***

Align: Align selected objects (shapes, pictures) relative to each other.

Group: Group multiple selected objects so they can be manipulated together.

Rotate: Rotate selected objects.

## ***Themes Gallery:***

A visual gallery displaying various predefined themes you can choose from to apply to your worksheet.

## ***Background:***

Printed Watermark: Set a background image or color to be displayed when the worksheet is printed. However, this won't actually print as part of the worksheet.

## ***Print Titles:***

Rows to Repeat at Top: Specify rows to be repeated at the top of each printed page.

Columns to Repeat at Left: Specify columns to be repeated at the left of each printed page.

## ***Breaks:***

Insert Page Breaks: Choose to insert a page break before, after, or both before and after a selected cell or range.

## ***Scale:***

Adjust the scaling of the worksheet for printing by specifying a custom percentage to fit the worksheet within a certain number of pages.

# ***Excel Formulas:***

1. **AND:** Checks if all arguments are true.

```
=AND(A1>10, B1<20)
```

2. **AVERAGE:** Calculates the average of a group of numbers.

```
=AVERAGE(A1:A10)
```

3. **AVERAGEIF:** Calculates the average of a range based on specified criteria.

```
=AVERAGEIF(B1:B10, ">50")
```

4. **AVERAGEIFS:** Calculates the average based on multiple criteria.

```
=AVERAGEIFS(C1:C10, B1:B10, "John", A1:A10, ">30")
```

5. **CHAR:** Returns the character specified by the ASCII value.

```
=CHAR(65) // Returns "A"
```

6. **CONCATENATE:** Joins together multiple text strings into one

```
=CONCATENATE("Hello", " ", "world!")
```

7. **COUNT:** Counts the number of cells in a range that contain numbers.

```
=COUNT(A1:A10)
```

8. **COUNTA:** Counts the number of non-empty cells in a range.

```
=COUNTA(A1:A10)
```

9. **COUNTIF:** Counts the number of cells that meet specified criteria.

```
=COUNTIF(A1:A10, ">50")
```

10. **COUNTIFS:** Counts the number of cells that meet multiple criteria.

**=COUNTIFS(A1:A10, ">50", B1:B10, "John")**

11. **DATE:** Returns the serial number for a specific date.

**=DATE(2023, 10, 4) // Returns the date for October 4, 2023**

12. **DAY:** Extracts the day from a date.

**=DAY(A1)**

13. **IF:** Returns one value if a condition is true and another if false.

**=IF(A1>10, "Yes", "No")**

14. **INDEX:** Returns the value of a cell in a specific row and column.

**=INDEX(A1:D10, 3, 2) // Returns the value in the third row, second column**

15. **INDIRECT:** Returns the reference specified by a text string.

**=INDIRECT("A1")**

16. **INT:** Rounds a number down to the nearest integer.

**=INT(7.8) // Returns 7**

17. **IFERROR:** Returns a value if a formula evaluates an error; otherwise, returns the result of the formula.

**=IFERROR(A1/B1, "Error")**

18. **LEFT:** Extracts a specified number of characters from the start of a text string.

**=LEFT(A1, 3) // Returns the first 3 characters from A1**

19. **LEN:** Returns the number of characters in a text string.

**=LEN(A1)**

20. **LOG:** Returns the logarithm of a number.

**=LOG(100) // Returns the logarithm of 100**

21. **LOWER:** Converts text to lowercase.

**=LOWER(A1) // Converts the text in A1 to lowercase**

22. **MATCH:** Searches for a value in a range and returns its relative position.

**=MATCH("Apple", A1:A10, 0) // Returns the position of "Apple" in the range**

23. **MAX:** Returns the maximum value in a range.

**=MAX(A1:A10)**

24. **MID:** Extracts a specific number of characters from a text string, starting at a specified position.

**=MID(A1, 2, 3) // Returns 3 characters starting from the 2nd character in A1**

25. **MIN:** Returns the minimum value in a range.

**=MIN(A1:A10)**

26. **MOD:** Returns the remainder after a number is divided by another number.

**=MOD(10, 3) // Returns 1 (remainder of 10 divided by 3)**

27. **MONTH:** Extracts the month from a date.

**=MONTH(A1)**

28. **NOT:** Reverses the logical value of a cell.

**=NOT(A1>10)**

29. **NOW:** Returns the current date and time.

**=NOW()**

30. **OR:** Checks if any arguments are true.

**=OR(A1>10, B1<20)**

31. **PI:** Returns the value of pi ( $\pi$ ).

**=PI()**

32. **POWER:** Raises a number to a specified power.

**=POWER(2, 3) // Returns 8 (2 raised to the power of 3)**

33. **RANDBETWEEN:** Generates a random number between specified boundaries.

**=RANDBETWEEN(1, 100) // Returns a random number between 1 and 100**

34. **RAND:** Generates a random number between 0 and 1.

**=RAND()**

35. **REPT:** Repeats text a specified number of times.

**=REPT("abc", 3) // Returns "abcabcabc"**

36. **RIGHT:** Extracts a specified number of characters from the end of a text string.

**=RIGHT(A1, 2) // Returns the last 2 characters from A1**

37. **ROUND:** Rounds a number to a specified number of decimal places.

**=ROUND(7.835, 2) // Returns 7.84**

38. **SEARCH:** Finds one text string within another (case-insensitive).

**=SEARCH("world", A1) // Returns the position of "world" in A1**

39. **SUBSTITUTE:** Replaces occurrences of a specified substring within a text string.

**=SUBSTITUTE(A1, "old", "new") // Replaces "old" with "new" in A1**

40. **SUM:** Adds a group of numbers.

**=SUM(A1:A10)**

41. **SUMIF:** Adds numbers based on specified criteria.

**=SUMIF(B1:B10, "John", C1:C10)**

42. **SUMIFS:** Adds numbers based on multiple criteria.

**=SUMIFS(C1:C10, B1:B10, "John", A1:A10, ">30")**

43. **TODAY:** Returns the current date.

**=TODAY()**

44. **TRIM:** Removes extra spaces from text, except for single spaces between words.

**=TRIM(A1) // Removes extra spaces from A1**

45. **UPPER:** Converts text to uppercase.

**=UPPER(A1) // Converts the text in A1 to uppercase**

46. **VALUE:** Converts a text string to a number.

**=VALUE("123") // Converts the text "123" to the number 123**

47. **VLOOKUP:** Searches for a value in the first column of a range and returns a value in the same row from a specified column.

**=VLOOKUP("Apple", A1:D10, 2, FALSE) // Returns the value from the second column where "Apple" is found**

48. **WEEKDAY:** Returns the day of the week for a given date.

**=WEEKDAY(A1)**

49. **YEAR:** Extracts the year from a date.



**=YEAR(A1)**

50. **IFNA:** Returns a specified value if a formula evaluates to #N/A error; otherwise, returns the result of the formula.

**=IFNA(VLOOKUP("Apple", A1:D10, 2, FALSE), "Not found")**

51. **TEXT:** Converts a value to text using a specified format.

**=TEXT(A1, "yyyy-mm-dd") // Converts a date in A1 to the format "yyyy-mm-dd"**

52. **ROUNDUP:** Rounds a number up to a specified number of decimal places.

**=ROUNDUP(7.835, 2) // Returns 7.84**

53. **ROUNDDOWN:** Rounds a number down to a specified number of decimal places.

**=ROUNDDOWN(7.835, 2) // Returns 7.83**

54. **CONCAT:** Joins together multiple text strings into one.

**=CONCAT("Hello", " ", "world!")**

55. **IFS:** Returns a value based on multiple conditions.

**=IFS(A1>10, "High", A1>5, "Medium", TRUE, "Low")**

56. **XLOOKUP:** Searches a range or an array, and returns an item corresponding to the first match it finds.

**=XLOOKUP("Apple", A1:A10, B1:B10) // Returns the corresponding value for "Apple"**

57. **FILTER:** Returns an array that meets specific criteria.

**=FILTER(A1:A10, B1:B10="John")**

58. **SUMPRODUCT:** Multiplies corresponding components in the given arrays and returns the sum of those products.

**=SUMPRODUCT(A1:A10, B1:B10)**

59. **TRANSPOSE:** Transposes rows and columns in a specified range of cells.

**=TRANSPOSE(A1:C3)**

60. **IFERROR:** Returns an alternative value if a formula evaluates an error.

**=IFERROR(A1/B1, "Division by zero")**