Excel 2019
Part 3
Revised January 2020

It is assumed that students are familiar with the components of the Windows screen in addition to having basic knowledge about the Excel environment. Excel 2019 Part 3 covers simple formulas, the AutoSum function, flash fill, headers, protecting cell data, using templates and printing.

Formulas

A formula allows you to perform calculations on numbers. Only the cell addresses—not the values (numbers)—should be entered in the formula.

Formulas must always begin with an equals sign (=). The formula should be entered immediately following the equal sign (no spaces).

Enter the formula either into the cell in which you want the answer to appear or the formula bar after clicking on the cell. For example, to add the values in cells A1 and A2 and have the answer appear in A3, in cell A3 type =A1+A2.

Using Basic Arithmetic operators

For performing basic mathematical operations such as addition, subtraction, or multiplication; combining numbers; and producing numeric results, use the following arithmetic operators:

When A1=8 and A2=2:

<table>
<thead>
<tr>
<th>ARITHMETIC OPERATOR</th>
<th>MEANING</th>
<th>FORMULA</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ (plus sign)</td>
<td>Addition</td>
<td>=A1+A2</td>
<td>10</td>
</tr>
<tr>
<td>– (minus sign)</td>
<td>Subtraction or Negation</td>
<td>=A1-A2</td>
<td>6</td>
</tr>
<tr>
<td>* (asterisk)</td>
<td>Multiplication</td>
<td>=A1*A2</td>
<td>16</td>
</tr>
<tr>
<td>/ (forward slash)</td>
<td>Division</td>
<td>=A1/A2</td>
<td>4</td>
</tr>
<tr>
<td>^ (caret)</td>
<td>Exponentiation</td>
<td>=A1^A2</td>
<td>64</td>
</tr>
</tbody>
</table>
AutoSum

The AutoSum feature is a shortcut to using Excel's SUM function. It provides a quick way to add columns or rows of numbers in a spreadsheet. The AutoSum icon is the Greek letter Sigma, which looks like an E or sideways M.

Flash Fill

Flash Fill is a tool that can enter data automatically into your worksheet, saving you time and effort.

Flash Fill automatically fills your data when it senses a pattern. For example, we will use Flash Fill below to separate first and last names into separate columns. The needed information will be pulled from a list of email addresses.

1. Go to the Flash Fill sheet and click on cell B2
2. Type the last name Lee in cell B2; press Enter
3. Start typing the next last name (Gates) in cell B3. Excel will sense the pattern you provide, and show you a preview of the rest of the column filled in with your combined text (last names in this example).
4. Press Enter to accept the preview. The list of last names will appear in the B column

If Flash Fill doesn't generate the preview, it might not be turned on. To turn Flash Fill on, go to Tools → Options → Advanced → Editing Options → check the Automatically Flash Fill box.

Alternatively, go to Data → Flash Fill to run it manually, or press Ctrl+E.

Practice Exercise: Using Arithmetic Operators

Open the excel_practice_file and go to the Formulas and Functions worksheet to enter the formulas in the highlighted cells for each column:

1. In cell B9, type the Addition formula =B4+B5+B6+B7+B8
2. In cell D9, type the Subtraction formula =D7-D8
3. In cell F9, type the Multiplication formula =F7*F8
4. In cell H9, type the Division formula =H7/H8

Practice Exercise: AutoSum

1. Go to the Book Sales worksheet
2. Click in cell B8
3. Go to Home tab → Editing group → AutoSum command to insert the AutoSum formula for January
4. Click on C8 and D8 and repeat above steps to calculate the February and March sales
5. Insert the AutoSum function in cells E4 through E7 to calculate the 1st quarter totals
Headers

Adding a Header to a Worksheet

1. Go to the **Insert** tab → **Text** group → **Header & Footer** command

   The spreadsheet changes to **Page Layout** view. Three boxes are visible above the worksheet page; by default, the center box is selected.

2. Click inside the left header box

3. Go to the **Header & Footer Tools Design** tab → **Header and Footer Elements** group → **File Name** command

4. Click inside the right header box

5. Go to the **Header & Footer Tools Design** tab → **Header and Footer Elements** group → **Page Number** command

Returning to Normal View

1. Click on any cell in the worksheet to leave the header area

2. Go to the **View** tab → **Workbook Views** group → **Normal**

Viewing the Header

Headers are not visible in Normal view. To view a header, choose one of these options:

- Go to the **View** tab → **Workbook Views** group → **Page Layout**
- Click the **Page Layout** view on the status bar at the bottom of the screen
Protecting Cell Data

Each cell in the worksheet can be locked or unlocked. By default, Excel locks all of the cells in a protected worksheet. By protecting a sheet, users can’t inadvertently wipe out a title or formula in the worksheet by entering a value in the wrong column or row.

Protecting Cells

1. Go to the loan figures sheet
2. Go to Review tab → Changes group → Protect Sheet command
3. Excel opens the Protect Sheet dialog box

NOTE: The Select locked cells and Select unlocked cells checkboxes are selected by default; any other checkbox can be selected as needed.
4. Type a password into the Password to unprotect sheet box
5. Click OK
6. Excel opens the Confirm Password dialog box. Re-enter the password and click OK

If anyone tries to edit a cell, Excel displays an error message:

Unlocking All Cells

1. If necessary, go to the loan figures sheet
2. Go to Review tab → Changes group → Unprotect Sheet command
3. Type the previously entered password into the Password box and click OK
Unlocking Specific Cells

Unlocking specific cells may be practical in certain situations. For example, in a budget worksheet, the owner of the worksheet may want to allow changes in only specific cells while keeping the rest of the cells in the sheet protected. Doing so prevents other users from inadvertently deleting or editing data in locked cells but allows changes in unlocked cells.

1. If necessary, go to the loan figures sheet
2. Click on cell B4, hold down the Ctrl key, and click on cell B10 so that only those two cells are selected
3. Go to Home tab → Cells group → Format command → Format Cells
4. In the Format Cells dialog box, click the Protection tab
5. Click the Locked checkbox to remove the checkmark and click OK
6. Protect the worksheet as described earlier

All of cells in the worksheet are now protected except for B4 and B10.

Printing

Printing in Excel is challenging because spreadsheets often cover several pages. The program attempts to print every part of the spreadsheet that contains filled cells.

To print, go to the File tab → Print

A print preview image appears on the right side of the screen. This displays how the print job will appear when it is printed on paper. Scroll through the different pages of the print job by using the arrows in the bottom left corner of the print preview or by using the scroll bar.

Fit Sheet on One Page

If fitting the data on the page is a challenge, the Fit Sheet on One Page option can be used. However, doing so may shrink the data to an illegible size, so check the page after printing.

1. Go to File tab → Print → Scaling → Fit Sheet on One Page
Changing Paper Orientation

Spreadsheets are typically printed in Landscape view.

Go to the Page Layout tab → Page Setup group → Orientation command → Landscape

Printing Part of a Sheet

1. Select the area to be printed

2. Go to the Page Layout tab → Page Setup group → Print Area command → Set Print Area; a dashed line appears around the selected area

3. Go to the File tab → Print to see how the document will print

**NOTE:** Make other necessary changes (see below) before printing

To remove set print area, go to the Page Layout tab → Page Setup group → Print Area command → Clear Print Area; a dashed line appears around the selected area

Changing Margins

Reducing the margins is another way to fit more worksheet data onto a printed page.

1. Go to the Page Layout tab → Margins command

2. Choose a setting from the drop-down list or click on Custom Margins at the bottom of the list for more options

3. In the Page Setup dialog box, use the small up and down triangles to change the size of the margins or click inside the box with the margin value and enter a number

4. Click OK to finalize margins
Printing Row and Column Headings

To print the row and/or column headings on every page:

1. Go to the **PivotTable** worksheet

2. Go to the **Page Layout** tab → **Page Setup** group → **Print Titles** command

3. In the **Page Setup** dialog box, click on the **Sheet** tab (if necessary)

4. Click the icon at the end of the **Rows to repeat at top box** text box

5. Click the number 1 on the spreadsheet so that Row 1 is selected (indicated by marching ants)

6. Hit **Enter** on the keyboard; $1:$1 appears in the **Rows to repeat at top box**

7. Do the same for the columns (if necessary), using the **Columns to repeat at left box**

8. Click **OK**

Printing Gridlines

It is typically easier to read spreadsheets when gridlines are visible.

1. Go to the **Page Layout** tab → **Sheet options** group

2. Under **Gridlines**, click the **Print** checkbox
Templates

Excel 2019 provides templates, which are ready-made worksheets for common uses. These predesigned templates contain standard or boilerplate text that can be modified to fit the user’s needs. Templates are designed with the formatting and pre-defined formulas. With templates, you don’t need to know how to do the math, or even how to write formulas—these are already integrated into the spreadsheet. Use the templates automatically installed with Excel 2019 or download free templates from Office.com, the Microsoft Office website. Excel templates use the filename extension .xltx (as opposed to .xlsx for an Excel workbook).

Create a new workbook from a template:

1. Go to File tab → New
2. The New panel appears in the Backstage view
3. Several templates will appear next to and below the Blank workbook option. Select a template to review it.
4. A preview of the template will appear, along with additional information on how the template can be used. Click Create to use the selected template.
5. Customize and edit the template as needed
6. Use Save As to save the file with a new name