Excel 2013 - Simple Formulas

Introduction

One of the most powerful features in Excel is the ability to calculate numerical information using formulas. Just like a calculator, Excel can add, subtract, multiply, and divide. In this lesson, we'll show you how to use cell references to create simple formulas.

Mathematical operators

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

<table>
<thead>
<tr>
<th>Operator</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addition</td>
<td>+</td>
</tr>
<tr>
<td>Subtraction</td>
<td>-</td>
</tr>
<tr>
<td>Multiplication</td>
<td>*</td>
</tr>
<tr>
<td>Division</td>
<td>/</td>
</tr>
<tr>
<td>Exponents</td>
<td>^</td>
</tr>
</tbody>
</table>

All formulas in Excel must begin with an equals sign (=). This is because the cell contains, or is equal to, the formula and the value it calculates.

Understanding cell references

While you can create simple formulas in Excel manually (for example, =2+2 or =5*5), most of the time you will use cell addresses to create a formula. This is known as making a cell reference. Using cell references will ensure that your formulas are always accurate because you can change the value of referenced cells without having to rewrite the formula.

By combining a mathematical operator with cell references, you can create a variety of simple formulas in Excel. Formulas can also include a combination of cell references and numbers, as in the examples below:

- =A1+A2 Adds cells A1 and A2
- =C4-3 Subtracts 3 from cell C4
- =E7/J4 Divides cell E7 by J4
- =N10*1.05 Multiplies cell N10 by 1.05
- =R5^2 Finds the square of cell R5

To create a formula:

In our example below, we'll use a simple formula and cell references to calculate a budget.

1. Select the cell that will contain the formula. In our example, we'll select cell B3.
2. Type the equals sign (=). Notice how it appears in both the cell and the formula bar.
3. Type the cell address of the cell you wish to reference first in the formula: cell B1 in our example. A blue border will appear around the referenced cell.
4. Type the mathematical operator you wish to use. In our example, we'll type the addition sign (+).
5. Type the **cell address** of the cell you wish to reference second in the formula: cell B2 in our example. A **red border** will appear around the referenced cell.

6. Press **Enter** on your keyboard. The formula will be **calculated**, and the **value** will be displayed in the cell.

**Hint:** If the result of a formula is too large to be displayed in a cell, it may appear as **pound signs** (#######) instead of a value. This means that the column is not wide enough to display the cell content. **Simply increase the column width** to show the cell content.

### Modifying values with cell references

The true advantage of cell references is that they allow you to **update data** in your worksheet without having to rewrite formulas. In the example below, we’ve modified the value of cell B1 from $1,200 to $1,800. The formula in B3 will automatically recalculate and display the new value in cell B3.

**Tip:** Excel **will not always tell you** if your formula contains an error, so it’s up to you to check all of your formulas.

To create a formula using the point-and-click method:

Rather than typing cell addresses manually, you can **point and click** on the cells you wish to include in your formula. This method can save a lot of time and effort when creating formulas. In our example below, we’ll create a formula to calculate the cost of ordering several boxes of plastic silverware.
Tip: Formulas can also be copied to adjacent cells with the fill handle, which can save a lot of time and effort if you need to perform the same calculation multiple times in a worksheet.

To edit a formula:

Sometimes you may want to modify an existing formula. In the example below, we've entered an incorrect cell address in our formula, so we’ll need to correct it.

1. Select the cell containing the formula you wish to edit. In our example, we’ll select cell B3.

2. Click the formula bar to edit the formula. You can also double-click the cell to view and edit the formula directly within the cell.

A border will appear around any referenced cells. In our example, we'll change the second part of the formula to reference cell B2 instead of cell C2.

4. When finished, press Enter on your keyboard or select the Enter command in the formula bar.

5. The formula will be updated, and the new value will be displayed in the cell.

Hint: If you change your mind, you can press the Esc key on your keyboard or click the Cancel command in the formula bar to avoid accidentally making changes to your formula.

To show all of the formulas in a spreadsheet, you can hold the Ctrl key and press ` (grave accent). The grave accent key is usually located in the upper-left corner of the keyboard. You can press Ctrl+` again to switch back to the normal view.