

CHAPTER FOUR: USING FORMULAS

Calculating formulas in Microsoft Excel is one of the most useful tools in the program. By creating your own formulas, Excel will add, subtract, multiply, and divide numbers for you. You can also find the average, minimum, and maximum of a set of numbers.

This Chapter Will Include:

- Creating Formulas
- Using Cell References
- Using the AutoSum Feature
- Using the AutoCalculate Feature

Creating Formulas

There are five mathematical operations you can use in an Excel formula. You can combine as many as you want in a single formula.

Symbol	Action
+	Addition
-	Subtraction
*	Multiplication
/	Division
^	Exponentiation

To create a formula, follow these steps:

1. In an empty cell, type the = key. This will designate that you are beginning a formula.
2. Click the cell containing the first number you want to have in your formula. A blue border will appear around that cell, and the cell name should appear in your formula cell in blue text.
3. Add the appropriate symbol from the above list directly after the number.
4. Click the cell containing the second number you want to add to your formula. A green line will appear around that cell, and the cell name should appear in your formula cell in green text.

B20		fx =E5+E32	
	A	B	
1	<i>Houses in the Loui</i>		
2			
3			
4	Color	Location	
5	Blue House	Lexington Rd.	
6	Red House	Pennsylvania Ave.	
7	Green House	St. Regis Way	
8	Yellow House	Sterling Rd.	
9	Gray House	Taylorsville Rd.	
10	White House	Lowe Rd.	
11	Purple House	Frankfort Ave.	
12			
13			
14			
15			
16			
17			
18			
19	House Description	Total Approximate Cost	
20	Blue House	\$201,000	

There are also several alternative methods to creating formulas:

1. Instead of clicking the cells containing numbers you want to add to your formula, you can simply type the cell name into the formula. For example, if you wanted to add cell E5 as the first number in the formula, type =E5. Once you have done this, the cell will still appear with a colored border around it.
2. You can also add numbers to a formula instead of choosing numbers already existing in your worksheet. For example, typing =2500+3000 is recognized as a valid formula.

Using Cell References

There are two types of cell references: **relative cell references** and **absolute cell references**. By default, cell references are relative.

Relative Cell References:

- When a cell containing a formula made up other cells is copied or moved, the formula will automatically adjust itself.
- For example, if you move or copy a cell with the formula =E7+E16 to a cell in the right adjacent column, the formula will correct itself and appear as =F7+F16. If you move the formula down one row, the formula will appear as =E8+E17.

Absolute Cell References:

- When you move or copy a cell containing a formula, you may not want the formula to adjust itself. Cell references contain two parts: the column and the row. By adding the dollar sign (\$) in front of the column or row reference (or both), the number will not change when moved or copied.

B26 fx =E11+\$E38			
	A	B	C
1	Houses in the Louisville Area		
2			
3			
4	Color	Location	% of Similar Houses Nearby
5	Blue House	Lexington Rd.	15%
6	Red House	Pennsylvania Ave.	5%
7	Green House	St. Regis Way	0%
8	Yellow House	Sterling Rd.	30%
9	Gray House	Taylorsville Rd.	25%
10	White House	Lowe Rd.	75%
11	Purple House	Frankfort Ave.	2%
12			
13			
14			
15			
16			
17			
18			
19	House Description	Total Approximate Cost	
20	Blue House	\$201,000	
21	Red House	\$180,000	
22	Green House	\$186,500	
23	Yellow House	\$152,000	
24	Gray House	\$252,500	
25	White House	\$196,000	
26	Purple House	\$212,300	\$2,300

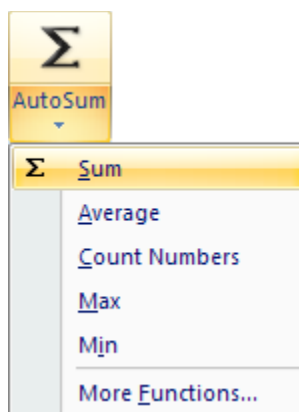
- Absolute cell references appear three ways:
 - \$E3** → Indicates that only the column (E) will remain the same, while the row (3) will change
 - E\$3** → Indicates that the column will change, while the row will remain the same
 - \$E\$3** → Indicates that both the row and column will remain the same
- You can make a cell reference absolute one of two ways:
 - In the cell or formula bar, make sure the cursor is where you want the absolute cell reference to appear and add the dollar sign (\$)
 - Make sure the cursor is where you want the absolute cell reference and press **F4** (you may need to press F4 more than once to get the specific reference you want)

Using the AutoSum Feature

When a group of cells containing numbers is selected, you can use the **AutoSum** feature to add the cells, find the average, minimum, or maximum in the cells, or calculate the total number of cells in the group.

To use the AutoSum feature, follow these steps:

1. Place the cell pointer in an empty cell where you want the calculated number to appear.
2. In the **Formulas** tab, find the **AutoSum** icon in the **Function Library** group.
3. If you want to find the total sum of the numbers selected, simply click the AutoSum button.
4. To find the average, minimum, or maximum of the cells, click on the **down arrow** next to the AutoSum button and select the appropriate function.



5. A border will surround numbers that appear in cells above your empty cell. You can select different cells if you wish.
6. When the formula appears as you want it, press **Enter**, **Tab**, or click another cell to have the formula calculated.

Date Viewed	Price
March 4, 2007	\$200,000
February 15, 2007	\$175,000
January 20, 2007	\$185,000
February 21, 2007	\$150,000
March 13, 2007	\$250,000
April 1, 2007	\$190,000
April 23, 2007	\$210,000
Total	=SUM(E5:E12)
Average	SUM(number1, [number2], ...)
Minimum	
Maximum	

Using the AutoCalculate Feature

The **AutoCalculate** feature appears in the **Status bar**. By default, when a group of numbers is selected, AutoCalculate calculates the sum, average, and total count of cells selected. You can remove any of these features as well as add the minimum or maximum functions. These calculations appear only in the Status bar and do not affect your worksheet.

To add or remove AutoCalculate functions in the Status bar, follow these steps:

1. Select a range of numbers. When you look at the Status bar, you should see something similar to this:



2. To add or remove any of the operations, right-click on the Status bar and select an option from the menu that appears.

