

## 8.14: Lookup Functions and Formulas

### Learning Objectives

- Use lookup functions and formulas

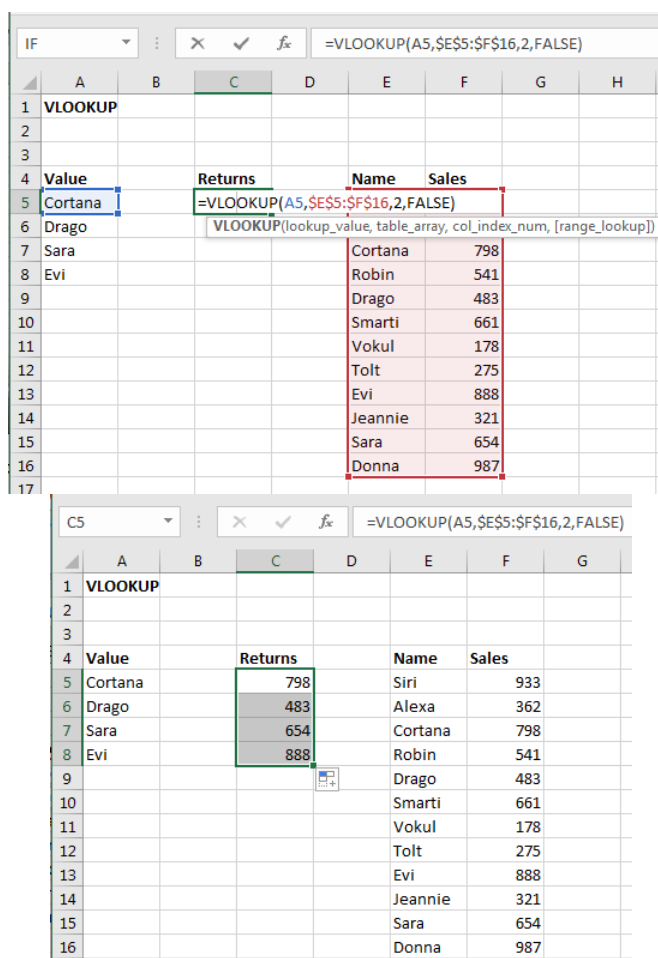
Lookup functions in Excel are used for looking through a single column or row to find a particular value from the same place in a second column or row. This often takes place when there are multiple worksheets within a workbook or a large amount of data in a worksheet. Lookup functions are very helpful with large sets of data to find specific information across many rows or columns.

### VLOOKUP (Vertical Lookup)

Looks for a value in the leftmost column of a table and returns a value in the same row from the vertical column you define. The lookup value must always be in the leftmost column of the table.

The Excel formula is written `=VLOOKUP(lookup_value,table_array,col_index_num,[range_lookup])`

This table includes the sales totals for salespeople. In this case you want to find out what the sales were for certain salespeople. This is a small example but imagine a long list of names and numbers to search through. Using the VLOOKUP function quickly brings you the results you want. Be sure to use F4 to create the absolute references and keep the table array the same for each lookup. Also make sure and make the col\_index\_num use the second column in the table (column 2 in the table) with a return for the range\_lookup as FALSE. By using FALSE in all cases, there is no need to sort your tables into ascending order. Here is what those results look like.



	A	B	C	D	E	F	G	H
1	VLOOKUP							
2								
3								
4	Value	Returns			Name	Sales		
5	Cortana		=VLOOKUP(A5,\$E\$5:\$F\$16,2,FALSE)					
6	Drago		VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])					
7	Sara				Cortana	798		
8	Evi				Robin	541		
9					Drago	483		
10					Smarti	661		
11					Vokul	178		
12					Tolt	275		
13					Evi	888		
14					Jeannie	321		
15					Sara	654		
16					Donna	987		
17								

	A	B	C	D	E	F	G
1	VLOOKUP						
2							
3							
4	Value	Returns			Name	Sales	
5	Cortana	798			Siri	933	
6	Drago	483			Alexa	362	
7	Sara	654			Cortana	798	
8	Evi	888			Robin	541	
9					Drago	483	
10					Smarti	661	
11					Vokul	178	
12					Tolt	275	
13					Evi	888	
14					Jeannie	321	
15					Sara	654	
16					Donna	987	

For another VLOOKUP example, watch this video of how to use this function to find parts that are in stock and the supplier for particular parts.

A link to an interactive elements can be found at the bottom of this page.

## HLOOKUP (Horizontal Lookup)

Looks for a value in the topmost row of a table and returns a value in the same row from the horizontal column you define. The lookup value must always be in the leftmost column of the table.

The Excel formula is written **=HLOOKUP(lookup\_value,table\_array,row\_index\_num,[range\_lookup])**

A link to an interactive elements can be found at the bottom of this page.

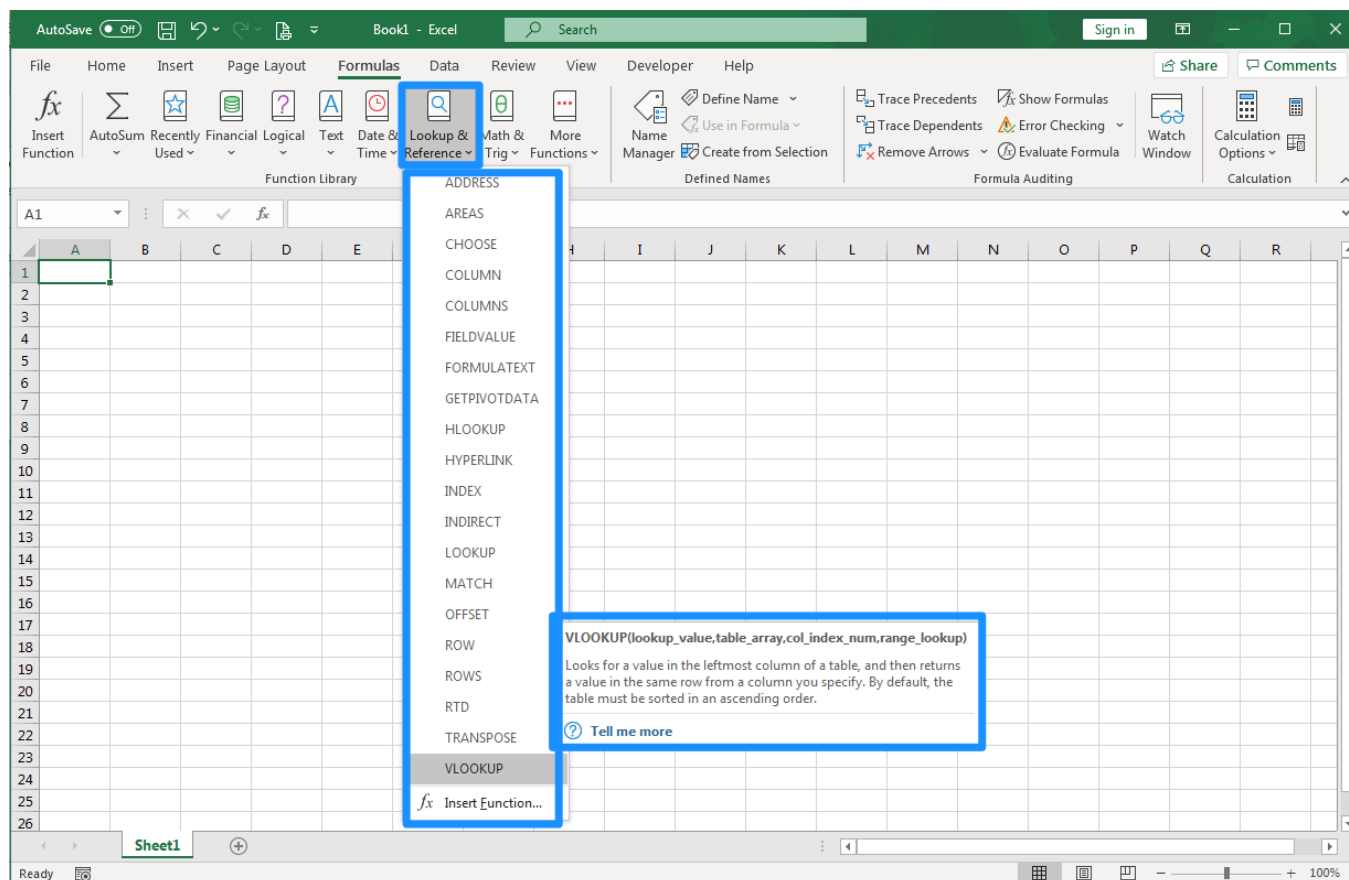
## MATCH and INDEX Functions

Now we'll learn two additional lookup functions, Match and Index. Watch this video to learn how to use Match and Index lookup functions. Here are the descriptions and formulas for creating them in Excel.

A link to an interactive elements can be found at the bottom of this page.

- **MATCH** – Function that returns a position of a value in a range which can be a row, column or table. The Excel formula is written **=MATCH(lookup\_value,lookup\_array,[match\_type])**
- **INDEX** – Function that returns a position of a value in a range which looks at the intersection of a column and row position in a table. The Excel formula is written **=INDEX(reference,row\_num,[column\_num],[area\_num])**

As you become more familiar with lookup functions, try out a few more by selecting the Formulas tab, Lookup & Reference button and see what others are available for you to try.



### PRactice Questions

<https://assessments.lumenlearning.co...essments/18678>

<https://assessments.lumenlearning.co...essments/18679>

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