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LAB SET 02

I. Excel Function: VLOOKUP

Syntax

VLOOKUP(*lookup_value*, *table_array*, *col_index_num*, [*range_lookup*])

The VLOOKUP function syntax has the following arguments:

lookup_value (Required) The value to search in the first column of the table or range. The *lookup_value* argument can be a value or a reference. If the value you supply for the *lookup_value* argument is smaller than the smallest value in the first column of the *table_array* argument, VLOOKUP returns the #N/A error value.

table_array (Required) The range of cells that contains the data. You can use a reference to a range (for example, A2:D8), or a range name. The values in the first column of *table_array* are the values searched by *lookup_value*. These values can be text, numbers, or logical values. Uppercase and lowercase text are equivalent.

col_index_num (Required) The column number in the *table_array* argument from which the matching value must be returned. A *col_index_num* argument of 1 returns the value in the first column in *table_array*; a *col_index_num* of 2 returns the value in the second column in *table_array*, and so on.

range_lookup (Optional) If the *range_lookup* argument is FALSE (or 0), VLOOKUP will find only an exact match. If there are two or more values in the first column of *table_array* that match the *lookup_value*, the first value found is used. If an exact match is not found, the error value #N/A is returned.

Exercise 1

This example searches the Density column of an atmospheric properties table to find corresponding values in the Viscosity and Temperature columns. (The values are for air at 0 degrees Celsius at sea level, or 1 atmosphere.)

	A	B	C
1	Density	Viscosity	Temperature
2	0.457	3.55	500
3	0.525	3.25	400
4	0.606	2.93	300
5	0.675	2.75	250
6	0.746	2.57	200
7	0.835	2.38	150
8	0.946	2.17	100
9	1.09	1.95	50
10	1.29	1.71	0
11	Formula	Description	Result
12	=VLOOKUP(1;A2:C10;2)	Using an approximate match, searches for the value 1 in column A, finds the largest value less than or equal to 1 in column A which is 0.946, and then returns the value from column B in the same row.	2.17
13	=VLOOKUP(1;A2:C10;3;TRUE)	Using an approximate match, searches for the value 1 in column A, finds the largest value less than or equal to 1 in column A, which is 0.946, and then returns the value from column C in the same row.	100
14	=VLOOKUP(0.7;A2:C10;3;FALSE)	Using an exact match, searches for the value 0.7 in column A. Because there is no exact match in column A, an error is returned.	#N/A
15	=VLOOKUP(0.1;A2:C10;2;TRUE)	Using an approximate match, searches for the value 0.1 in column A. Because 0.1 is less than the smallest value in column A, an error is returned.	#N/A
16	=VLOOKUP(2;A2:C10;2;TRUE)	Using an approximate match, searches for the value 2 in column A, finds the largest value less than or equal to 2 in column A, which is 1.29, and then returns the value from column B in the same row.	1.71

II. Excel Function: FACT

Syntax

FACT(number)

Number is the nonnegative number you want the factorial of. If number is not an integer, it is truncated.

Exercise 2

	A	
1	Data	
2	6	
	Formula	Description (Result)
	=FACT(A2)	Factorial of 6, or $6*5*4*3*2*1$ (720)
	=FACT(3)	Factorial of 3, or $3*2*1$ (6)

III. Excel Function: COMBIN

Syntax

COMBIN(number,number_chosen)

Number is the number of items.

Number_chosen is the number of items in each combination.

Exercise 3

	A	B
1	Formula	Description (Result)
2	=COMBIN(8,2)	Possible two-person teams that can be formed from 8 candidates (28)

IV. Excel Function: PERMUT

Syntax

PERMUT(number,number_chosen)

Number is an integer that describes the number of objects.

Number_chosen is an integer that describes the number of objects in each permutation.

Exercise 4

	A	B
1	Data	Description
2	100	Number of objects
3	3	Number of objects in each permutation
	Formula	Description (Result)
	=PERMUT(A2,A3)	Permutations possible for the terms above (970200)