

Lookup Transform

The lookup transform function assigns index values to the values in a worksheet column A, corresponding to another column of interval or class limits:

„To which row/class in X belongs this value from A?“ (Basically, these are the raw values for a histogram.)

Lookup: If in the function you indicate a second (Y) column, same size like X, it returns not just the index value but the corresponding value from the Y column, i.e. the value from same row of the XY table.

The Y value can be a number, text, data, even a color value in the worksheet (@rgbcolor function). This way you can assign colors to symbols in a graph, depending on the symbols' values. (You can enter colors, symbol shapes etc. into worksheet, from the Worksheet ribbon > Cells > Graphic Cells. Apply these graphic cells in the Graph Properties dialog.)

Running Transforms:

From the data worksheet, select the Transform Edit window (Analysis-Ribbon > Transform > User-Defined). Paste the transform text with Ctrl-V, oder type it in.

Syntax:

lookup(numbers; x table [; y table])

Example 1: one-dimensional

$n = \{-4; 11; 31\}$

$x = \{1; 10; 30\}$

$col(3) = lookup(n; x)$

'places the index values of 1, 3, and -- (missing value) in column 3.

Notes:

-4 falls beneath 1, or the first x boundary; The index is 1

11 falls beyond 10 but below 30, The index is 3

31 lies beyond 30 The index is a missing value

$n = \{-4; 11; 31\}$

$x = \{1; 10; 30\}$

$col(1) = n$

$col(2) = x$

$col(3) = lookup(n; x)$

	1-n	2-n	3-lookup(n;x)	
1	-4,0000	1,0000	1,0000	
2	11,0000	10,0000	3,0000	
3	31,0000	30,0000	--	
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Example 2: two-dimensional

With these X and Y columns, and the interval limits in col(3), run this transform:

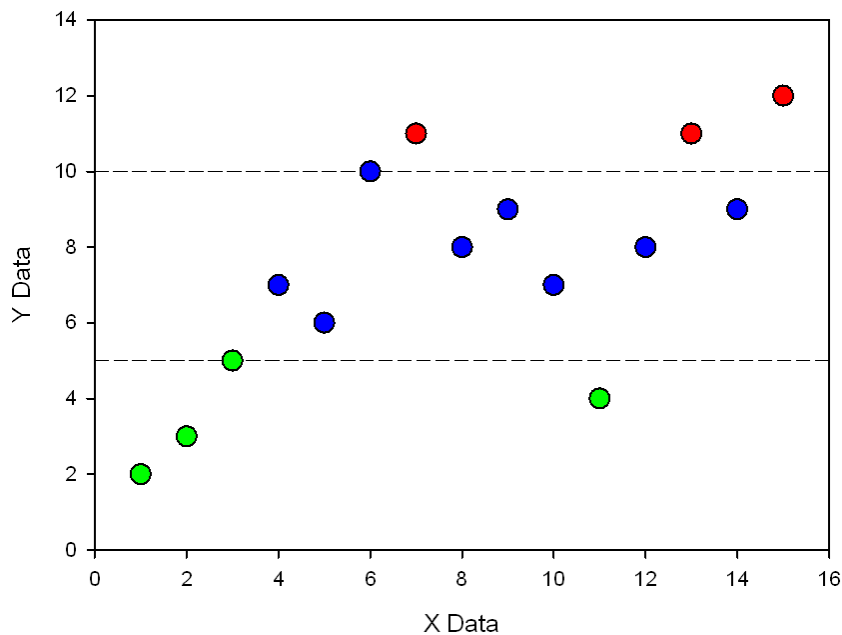
```
Y = col(2)
n = col(3)
ncolors = col(4)

col(5) = lookup(Y; n)
col(6) = lookup(Y; n; ncolors)
```

	1-X	2-Y	3-n	4-ncolors	5-rank	6-rankcolor
1	1,0000	2,0000	5,0000	Green	1,0000	Green
2	2,0000	3,0000	10,0000	Blue	1,0000	Green
3	3,0000	5,0000	20,0000	Red	1,0000	Green
4	4,0000	7,0000			2,0000	Blue
5	5,0000	6,0000			2,0000	Blue
6	6,0000	10,0000			2,0000	Blue
7	7,0000	11,0000			3,0000	Red
8	8,0000	8,0000			2,0000	Blue
9	9,0000	9,0000			2,0000	Blue
10	10,0000	7,0000			2,0000	Blue
11	11,0000	4,0000			1,0000	Green
12	12,0000	8,0000			2,0000	Blue
13	13,0000	11,0000			3,0000	Red
14	14,0000	9,0000			2,0000	Blue
15	15,0000	12,0000			3,0000	Red
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In the Graph Properties for symbol color, select column 6 (from the end of the dropdown list).

Lookup transform / symbol colors



Generate the worksheet data

If you do not want to type the worksheet data in columns 1-3, paste these lines into the transform edit window (Ctrl-V), and run them:

```
col(1) = data(1; 15)
col(2) = {2;3;5;7;6;10;11;8;9;7;4;8;;11;9;12}
col(3) = {5; 10; 20}
```