

Ranking a set of values in a spreadsheet

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Assume you want to rank values x_1, x_2, \dots so that the largest number is ranked 1. Excel provides a simple formula for doing this. Unfortunately, it is not correct when some of the x values are the same. Here is an example.

	A	B	C	D	E
1	x	xls rank	k1	k2	rank
2	5	1	0	1	1
3	4.4	2	1	3	2.5
4	4.4	2	1	3	2.5
5	3	4	3	4	4
6	2	5	4	5	5
7	1	6	5	6	6
8	avg	3.33			3.5

item	formula
k1	=COUNTIF(A\$2:A\$7,">"&A2)
k2	=COUNTIF(A\$2:A\$7,">="&A2)
rank	=IF(C2=D2,C2+1,0.5*(C2+D2+1))
k1 = #values > x	
k2 = #values >= x	

If the x values are consecutively numbered (they are in the proper order), x_2 and x_3 will be assigned ranks 2 and 3 so the tied rank, for each of the two equal numbers, should be 2.5. Excel assigns a rank 2 to each of them. Consequently, Excel ranks tend to be too “good” (to small) on average. This can make a big difference when larger numbers of values are equal.

For a proper ranking, one needs three columns, where, for a given x value, k_1 is the number of values larger than x and k_2 is the number of values greater than or equal to x . The proper rank is then given by the simple formula above. Of course, you only need to fill in the first line with the formulas given on the right side above, then copy this line all the way down.