

4.10 Spearman's Rank coefficient

Consider the following set of datas:

x	2	5	8	15.5	16.2	14	12	13	2.5	1	0.5	-3
y	9	-6	-7	-28	-15	-20	-15	-20.3	9	4.1	6	12.1

Let's see how to rank these values with the TI-Nspire.

- ① First create a new document, select Add Lists & Spreadsheets and add your data:

	A	B	C	D
1	2.	9.		
2	5.	-6.		
3	8.	-7.		
4	15.5	-28.		
5	16.2	-15.		

- ② Then, select all cells of column A and B. Press and select Actions > Sort. Fill the parameters as follows and press :

Sort


Range: a1:b12

Sort By:

Sort:

- ③ Put numbers from 1 to 12 in column C:

	A	B	C	D
1	-3.	12.1	1.	
2	0.5	6.	2.	
3	1.	4.1	3.	
4	2.	9.	4.	
5	2.5	9.	5.	

- ④ Now select all cells of column A, B and C. Press  and select Actions > Sort. Fill the parameters as follows:

Sort

Range: a1:c12

Sort By:

Sort:


OK Cancel

Press . This table should be displayed:

	A	B	C	D
1	15.5	-28.	11.	
2	13.	-20.3	9.	
3	14.	-20.	10.	
4	12.	-15.	8.	
5	16.2	-15.	12.	

- ⑤ Put numbers from 1 to 12 in column D. Be careful here, we see duplicates values in column B. When it is the case, put the mean of the ranking. Here we have same values for 4th and 5th position, which means we put 4.5 two times. Same for 10th and 11th position, we put 10.5 two times.

	A	B	C	D
1	15.5	-28.	11.	1.
2	13.	-20.3	9.	2.
3	14.	-20.	10.	3.
4	12.	-15.	8.	4.5
5	16.2	-15.	12.	4.5

- ⑥ Do a linear regression on C and D. To do so, press  and select Statistics > Stat Calculations > Linear Regression (mx+b). Fill the parameters as follows:

Linear Regression (mx+b)

X List: ▶

Y List: ▶

Save RegEqn to: ▶

Frequency List: ▶

Category List: ▶

Include Categories: ▶

OK Cancel

These results should appear:

E	F
	=LinRegM
m	-0.878
b	12.2
r^2	0.776
r	-0.881
Resid	{-1.5506...

The r value displayed is the ranked Spearman correlation coefficient.