

Q Calculating Spearman's Coefficient
Correlation with the 2nd
Method.

MTWTFSS

Date _/ _/ _

{ Calculation/Allocation of Ranks }
When Ranks are not given in the
question; Only X and Y are given.

S.No	X	R ₁	Y	R ₂	D(R ₁ -R ₂)	D ²
1	97.8	5	73.2	7	-2	4
2	99.2	1	85.8	2	-1	1
3	98.8	2	78.9	4	-2	4
4	98.3	4	75.8	6	-2	4
5	98.4	3	77.2	5	-2	4
6	96.7	7	87.2	1	6	36
7	97.1	6	83.8	3	3	9
						$\Sigma D^2 = 62$

$$N = 7$$

$$\text{Formula: } Rho \text{ or } R = \frac{1 - 6 \Sigma D^2}{N^3 - N}$$

Step 1: Allocate ranks from highest to lowest number or from the lowest to the highest number for column X and Y. But the same pattern of allocating ranks should be followed for both X and Y.

Step 2: Calculate $D \{R_1 - R_2\}$

Step 3: Obtain $\sum D^2$ by calculating column D^2 .

Step 4: Put all the values in formula:

$$\frac{1 - 6\sum D^2}{N^3 - N}$$

$$= \frac{1 - 6 \times 62}{73 - 7}$$

$$= \frac{1 - 372}{343 - 7}$$

$$= \frac{1 - 372}{336}$$

$$\underline{1} - \underline{1} \cdot \underline{107}$$

$$R = 0. \underline{107}$$