60080079 Introduction to Statistical Methods
Semester 2 2023-2024
Handout 3

Obtaining a Simple Random Sample using Excel

Suppose we have 20 observations, and we want to randomly sample five observations.

1. Open an Excel file, and use the following labels: cell A1 → ID and cell A2 → RN.

	A	B
1	ID	RN
2		
3		
4		
5		
6		

2. Enter the unique ID numbers (i.e., 1-20) from in cells A2 through A21.

	A	B
1	ID	RN
2	1	
3	2	
4	3	
5	4	
6	5	

3. To generate a random number for the first case, **type** **=rand()** in cell B2, then hit enter.

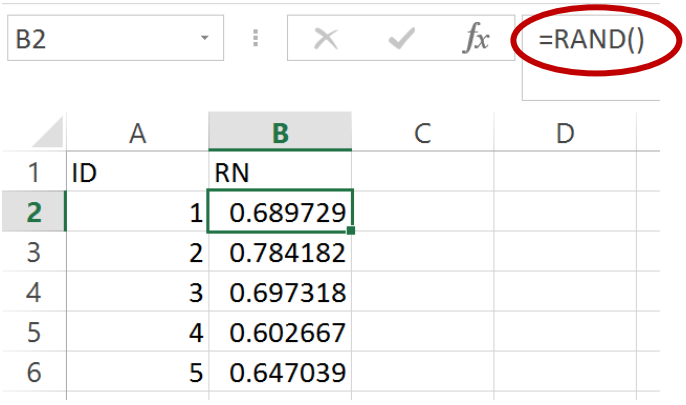
	A	B
1	ID	RN
2	1	=rand()
3	2	
4	3	
5	4	
6	5	
7	6	

Note: Different people will get different random numbers.

4. To replicate the process for the rest of the cases, click the lower left corner of B2 and drag up to B21. This will assign a random number to each of the 20 cases.

	A	B
1	ID	RN
2	1	0.219744
3	2	
4	3	
5	4	
6	5	

What happened to the random number in B2?

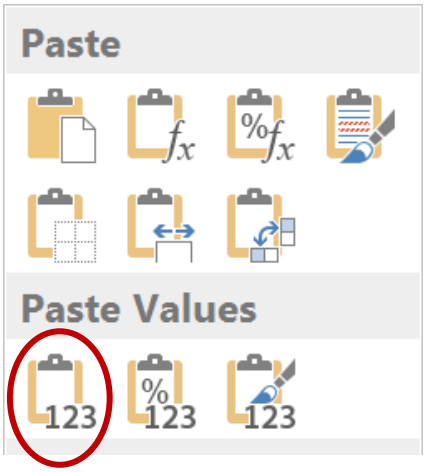


	A	B	C	D
1	ID	RN		
2	1	0.689729		
3	2	0.784182		
4	3	0.697318		
5	4	0.602667		
6	5	0.647039		

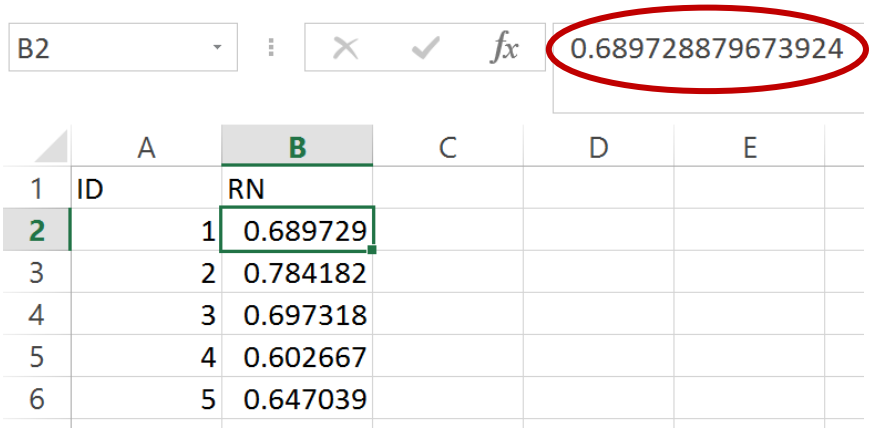
Note: The random numbers will keep on changing each time an operation takes place. A closer inspection indicates that B2 contains a function, rather than a fixed number.

5. To fix the generated random numbers, copy the entries in B2:B21.

   Then go to **Home → Paste → Paste Values**



   Choose the <u>first</u> option.

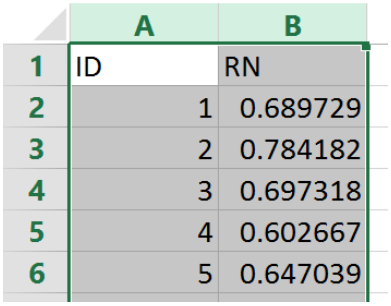


Now the entry of B1, as well as the rest of the cells, has been fixed.

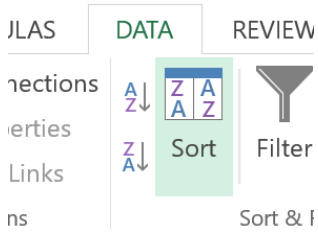
6. To select a random sample of size $n = 5$, we can choose the five IDs associated with the five lowest random numbers.

   To do so, we need to sort the data based on column B.

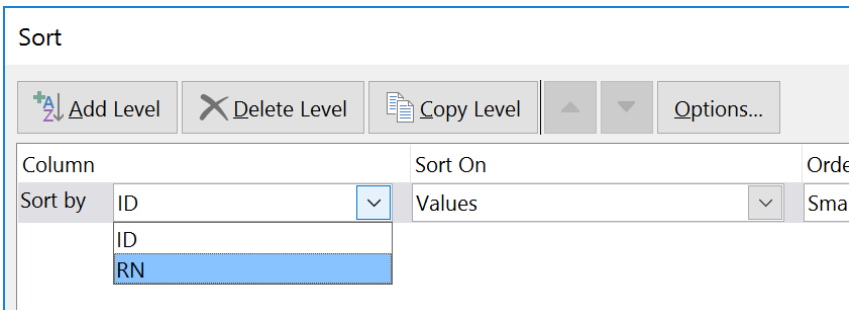
   a) Highlight columns A and B.



   b) Choose **Data → Sort**.



   c) **Sort by** RN, then hit **OK**.



7. We pick individuals/objects associated with IDs 10, 14, 15, 19, and 20.

	A	B
1	ID	RN
2	15	0.149326
3	19	0.204072
4	14	0.209925
5	10	0.215221
6	20	0.3529