

Chapter 4: Probability and Counting Rules

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4 - 4 Counting Rules

The image shows a screenshot of the Microsoft Excel interface. The 'Data' tab is selected in the ribbon, and the 'MegaStat' add-in is open. The 'MegaStat' window displays a list of statistical tools, with 'Probability' and 'Counting Rules' highlighted. Red callout boxes provide instructions for each step.

1. Click on "Data" tab

2. Run MegaStat

3. Click on "Probability"

4. Click on "Counting Rules"

The MegaStat window shows the following options:

- Frequency Distribution
- Probability**
- Confidence Intervals/Sample Size...
- Hypothesis Tests
- Analysis of Variance
- Correlation / Regression
- Time Series / Forecasting
- Chi-square / Crosstab
- Nonparametric Tests
- Quality Control Process Charts...
- Random Number Generation...
- Utilities
- Help / Information

The 'Counting Rules' sub-menu is open, showing the following options:

- Counting Rules**
- Discrete Probability Distributions
- Normal Distribution
- t-Distribution
- F-Distribution
- Chi-square-Distribution

4 - 4 Counting Rules (Factorial)

► Example 4-41, page 229: Find 5!

Counting Rules

Factorial n

Permutations

Combinations

Preview

OK

Clear

Cancel

Help

Type 5 in this field, then OK.

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Get Data Refresh All Sort Filter Data Tools What-If Analysis Forecast Outline Combine Split Data MegaStat

Get & Transform... Queries & Co... Sort & Filter Forecast Kutools Statistics

A1

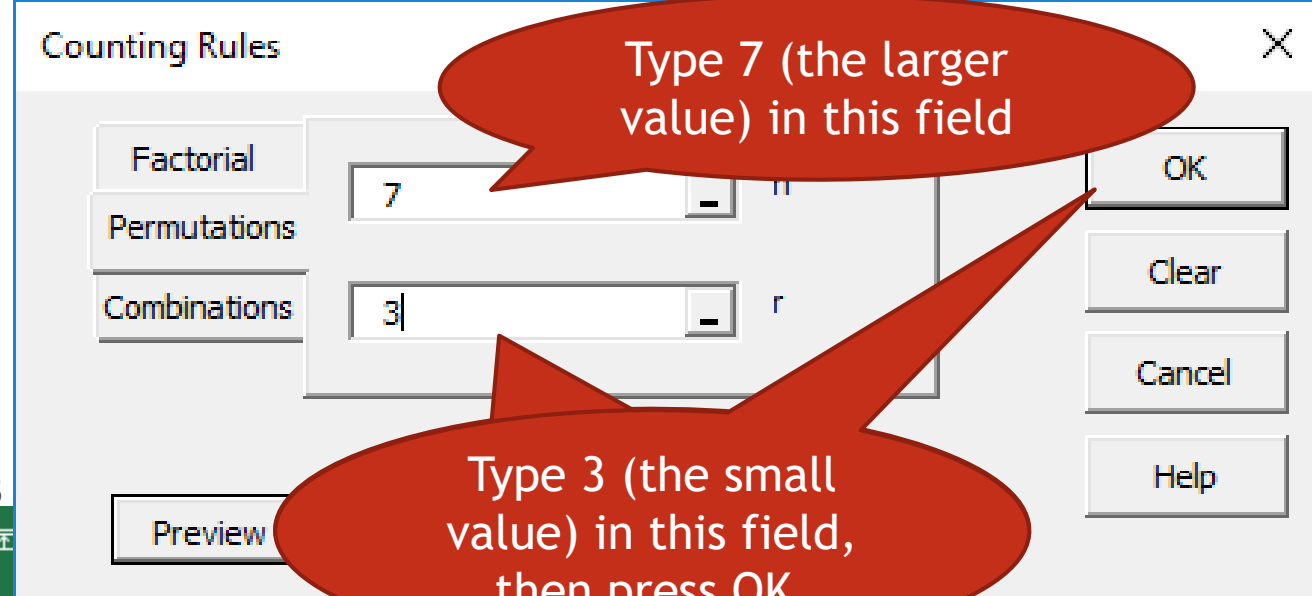
	A	B	C	D	E	F	G	H	I	J	K
1											
2		Factorial/Permutations/Combinations									
3											
4		5	n								
5		120	n!, n factorial								
6											
7		4.787	LN(n!)								
8											
9											
10											

Output Counting Rules

5! = 120

4 - 4 Counting Rules (Permutation)

► Example 4-44, page 231: Find ${}_7P_3$



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A9

9

10 Factorial/Permutation

11

12 7 n

13 3 r

14 210 nPr, number of permutations of n things taken r at a time

15

16 5.347 LN(nPr)

17

18

Output Counting Rules

Ready

${}_7P_3 = 210$

4 - 4 Counting Rules (Combinations)

► Example 4-47, page 233: Find ${}_4C_2$

Counting Rules

Factorial: 4

Permutations: -

Combinations: 2

OK

Clear

Cancel

Help

Preview

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A17

	A	B	C	I	J	K
17						
18	Factorial/Permutations					
19						
20		4	n			
21		2	r			
22		6	${}_n C_r$, number of combinations of n things taken r at a time			
23						
24		1.792	$\text{LN}({}_n C_r)$			
25						
26						

Output Counting Rules

Ready