Some mathematical, statistical and logical functions in excel

Some Examples	on the	Mathematical	Function
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$e^{-1.5}$	=EXP(-1.5)	0.22313016
log(25)	=LOG(25)	1.397940009
ln(25)	=LN(25)	3.218875825
$\binom{10}{2}$	=COMBIN(10,2)	45
$\sqrt{25}$	=SQRT(25)	5
-10	=ABS(-10)	10
3^2	=POWER(3,2)	
	=3^2	9

Some Examples on the Statistical Function

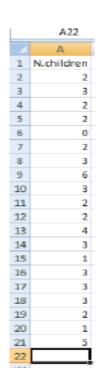
Example

Suppose we are interested in the number of children that a Saudi woman has and we take a sample of 20 women and obtain the following data on the number of children

- Calculate the mean, median, variance, standard deviation, total, maximum, minimum and mode(s)

To achieve this in excel put the data in a column (A2:A21) or raw and use the following commands

Total	=SUM(A2:A21)		52
Mean	=AVERAGE(A2:A21)		2.6
Median	=MEDIAN(A2:A21)		2.5
Max	=MAX(A2:A21)		6
Min	=MIN (A2:A21)		0
Standard	=STDEV(A2:A21)	New in Excel 2010	1.353358



deviation for		=STDEV.S(A2:A21)	
sample			
Standard	= STDEV P(A2:A21)	New in Excel 2010	
deviation for		=STDEV.P(A2:A21)	
population			1.319091
Variance for	=VAR(A2:A21)	New in Excel 2010	
sample		=VAR.S(A2:A21)	1.831579
Variance for	=VARP (A2:A21)	New in Excel 2010	
population		=VAR.S(A2:A21)	1.74

- Frequency Table

N.children		Frequency
0	=COUNTIF(A2:A21,"0")	1
1	=COUNTIF(A2:A21,"1")	2
2	=COUNTIF(A2:A21,"2")	7
3	=COUNTIF(A2:A21,"3")	7
4	=COUNTIF(A2:A21,"4")	1
5	=COUNTIF(A2:A21,"5")	1
6	=COUNTIF(A2:A21,"6")	1

- Probability distributions

If $X \sim N(2,7)$, then Calculate

P(X < 1.5)	=NORMDIST(1.5,2,7,TRUE)	0.471528
P(X < k) = 0.25, k?	=NORMINV(0.25,2,7)	-2.72143

Example on the Logical Functions

Use if statement to print the status of the student ($Pass \ge 60, Fail < 60$). In creation exam using the following marks

	A		
1	Marks	Function	Grade
2	70	=IF(A2<60,"Fail","Pass")	Pass
3	85	=IF(A3<60,"Fail","Pass")	Pass
4	83	=IF(A4<60,"Fail","Pass")	Pass
5	25	=IF(A5<60,"Fail","Pass")	Fail
6	80	=IF(A6<60,"Fail","Pass")	Pass
7	98	=IF(A7<60,"Fail","Pass")	Pass

8	80	=IF(A8<60,"Fail","Pass")	Pass
9	72	=IF(A9<60,"Fail","Pass")	Pass
10	42	=IF(A10<60,"Fail","Pass")	Fail
11	32	=IF(A11<60,"Fail","Pass")	Fail