Appendix

Action	Key		
Move by one cell in arrow direction	$\rightarrow \leftarrow \land \lor$		
Move to the edge of the current data region	$<$ Ctrl $\rightarrow \leftarrow \land \lor >$		
(area bounded by empty cells)			
Move to beginning of row	<home></home>		
Move to beginning of worksheet	<ctrl home=""></ctrl>		
Move to last cell in worksheet (bottom right)	<ctrl end=""></ctrl>		
Select entire column	<ctrl spacebar=""></ctrl>		
Select entire row	<shift spacebar=""></shift>		
Move down / up one screen	<page down=""> <page up=""></page></page>		
Goto a specified cell	<f5></f5>		
Move right / left one cell	<tab> <shift tab=""></shift></tab>		
Move down one cell / up one cell	<enter> <shift enter=""></shift></enter>		
Enter the date	<ctrl ;="">(SEMICOLON)</ctrl>		
Enter the time	<ctrl :="" shift=""> (COLON)</ctrl>		

A macro to produce a Bar Chart

Bar Chart								
Age Group	Patients se	en						
15-24	11							
25-34	17					F	Patients	s see
35-44	25							
45-54	50		70 T					
55-64	67		60 +					
65-74	32		50 -					
Total	202		40 +					
			30 -					
			20 -			_		
			10 -		1			
			o+		_			+
				15-2	4	25-34	35-44	45-

'BarChart Macro

```
Sub BarChart()
Workbooks.Add
Range("A1").Select
ActiveCell.FormulaR1C1 = "Bar Chart"
Range("A2").Select
ActiveCell.FormulaR1C1 = "Age Group"
Range("A3").Select
ActiveCell.FormulaR1C1 = "15-24"
Range("A4").Select
ActiveCell.FormulaR1C1 = "25-34"
Range("A5").Select
ActiveCell.FormulaR1C1 = "35-44"
Range("A6").Select
ActiveCell.FormulaR1C1 = "45-54"
Range("A7").Select
```

```
ActiveCell.FormulaR1C1 = "55-64"
Range("A8").Select
ActiveCell.FormulaR1C1 = "65-74"
Range("A9").Select
ActiveCell.FormulaR1C1 = "Total"
Range("A2:A8").Select
With Selection
    .HorizontalAlignment = xlCenter
    .VerticalAlignment = xlBottom
    .WrapText = False
    .Orientation = xlHorizontal
End With
Range("B3").Select
For I = 3 To 8
    CountVal = InputBox(
         prompt:="Enter the count for age group " + Cells(I, 1),
            default:="0")
    Cells (\overline{I}, 2).Value = CountVal
Next
ChartTitle = InputBox(
prompt:="Enter a title for this chart", _default:="")
Range("B2").Select
ActiveCell.FormulaR1C1 = ChartTitle
Range("B3:B9").Select
Range ("B9"). Activate
ActiveCell.FormulaR1C1 = "=SUM(R[-6]C:R[-1]C)"
Range("B9").Select
ActiveSheet.ChartObjects.Add(144, 27, 240, 164.25).Select
Application.CutCopyMode = False
ActiveChart.ChartWizard Source:=Range("A3:B8"), Gallery:=xlColumn, _
    Format:=3, PlotBy:=xlColumns, CategoryLabels:=1, SeriesLabels
    :=0, HasLegend:=1, Title:=ChartTitle,
CategoryTitle:="", ValueTitle:="", ExtraTitle:=""
```

```
End Sub
```

Using Lists with Data Validation

One of the Validation criteria is to Allow List. To use this the list must be a named area of the workbook.

Set up lists for categorical responses on a worksheet (which		A	В
	1	Sex	Answers
might be called 'Lists') as shown. Two lists are given.	2	Male	Yes
Cells A2:A3 are named <i>Gender</i>	3	Female	No
Calle P2: P1 are named Pasnansa	4		Missing
Cens D2.D4 are nameu Response	5		

Switch to, or Insert, a worksheet that will hold the data to be entered. Select column B which will store the sex variable. Select **Data | Validation**

	? 🛛
	<u>ii</u>
Japara blan	le .
I griore bian	
I In-cell drop	down
=	
ith the same set	tings
	_
OK	Cancel
	✓ Ignore blan ✓ Ign-cell drop In-cell drop In-cell drop In-cell drop In-cell drop In-cell drop In-cell drop

Select *List* from the *Allow:* dropdown box Enter <u>=Gender</u> in the *Source* text box. Click **OK**

Only the text 'Male' and 'Female' or a blank can be entered in column B of this worksheet.

In the example opposite validation has been removed from cell
B2 and a label Sex entered.
Selecting Cell B2 triggers display of the dropdown list arrow
which shows the dropdown list when clicked.

	Α	В	С	
1		Sex		
2			-	
3		Male		
4		Female		

In the Data Validation window:

if the Ignore blank check box is not checked, Blank cells are not permitted if the In-Cell dropdown is not checked, the Dropdown button is not shown

Note: Excel requires that the Source is a named group of cells. It cannot be specified as (=*Sheet1!A2:A3*). *The Source can also be in another Excel workbook (file)*

Forms

Excel can display a data as a form. The form is a dialog box that you can use to see, change, add, and delete records from a worksheet or database, or to find specific records based on criteria you specify.

To use forms, highlight the column labels and data that you want to edit and select **Data | Form.**

To use forms, highlight the row containing the column labels select **Data | Form.** A form as shown opposite will be displayed.

To create a blank form use create a row of column labels for the new data.

Data Validation applies to data being entered using a form including lists.

chaps			? ×
StudyNo:	1	-	1 of 187
Group:	1		Ne <u>w</u>
Birthwt:	2.495		<u>D</u> elete
GestAge:			Restore
Se <u>x</u> :	1		
Msmokbp:			Find Prev
Mastev:	2		Find <u>N</u> ext
Pas <u>t</u> ev:	1		<u>C</u> riteria
B1CDP1M:	5526		Close
B1MDP1M:	4415		
		-	

Form Items

Record Number [1 of 187]	Shows which record is displayed and how many records there are. The record number changes to New Record when you scroll past the end of the list.			
New	Clears the fields in the dialog box. Enter data for a new record and click on New again to add it, as a new record, at the end of the list.			
Delete	Deletes the displayed record. Other records move up in the list. Note Deleted records can not be restored.			
Restore	Restores edited fields in the displayed record, removing your changes. Note This MUST BE DONE before pressing ENTER or scrolling to another record			
Find Prev	Displays the previous record in the list. If you specified criteria using the Criteria button the previous record that matches the criteria is displayed			
Find Next	Displays the next record in the list. If you specified criteria using the Criteria button, the next record that matches the criteria is displayed.			
Criteria	Enables you to enter search criteria to find a subset of records.			
Close	Closes the data form dialog box.			
Clear	Removes existing search criteria from the dialog box. It is enabled only after you select the Criteria button. It replaces the Delete button.			
Form	Returns to the default data form. It is enabled only after you choose the Criteria button. It replaces the Criteria button.			

Moving around on the data form

Press the <Tab> key to move to the next field (or button) and <Shift+Tab> to move to the previous field (or button).

Double Punching of Data

To ensure extremely accurate data it should be double punched. This can be done by creating two Excel files. Punch the data into each file in the same order.

To compare the two versions, copy each worksheet into a new workbook (Excel file). Switch to a new worksheet so that the workbook has three sheets in it. Two worksheets called 'version 1' and 'version 2' have versions of the data and the third is blank called 'check'.

Move to cell A1 in the blank worksheet, enter the formula

=EXACT('version 1'!A1, 'version 2'!A1)

Then if the contents of cells A1 in the two versions of the entered data agree, the cell shows TRUE. If the contents do not agree the cell displays FALSE.

Copy the formula of A1 across all row 1 for all columns used, then copy the formula in all cells of row 1 down to all rows used by the data.

😫 Da	ita Checking	.xls						
	A	В	С	D	E	F	G	H
1	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TR
2	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
3	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
4	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
8	FALSE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE	TRI
9	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
10	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
11	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	TRI
12	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
13	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
14	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
15	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
16	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
17	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
18	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI
19	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRI 🗸
14 4	▶ N\Shee	t1 / version 1	l / version 2	/	•			١

Search through this worksheet to locate the word FALSE and check your two versions and original data to solve the difference.

Note even a difference of case, for example 'SUBJECT NO' and 'Subject No' will display as FALSE.



Producing a Histogram with the Normal curve superimposed

The main aspects of this are:

- The use of Named areas of the spreadsheet
- Creation of data values for a Normal distribution based on the mean and standard deviation of the data values, using the NORMDIST function
- Use of the Histogram tool found in **Tools | Data Analysis**
- Addition of a second series to a histogram

Note: To produce the type of chart shown above requires a reasonable number of data values (>50) because a large number of bins (>20) are needed to produce the Normal curve.

In this example named cells are used. A single cell or a sequence of cells can be named by highlighting the cells of interest and typing a name in the Name Box.

The name box birthwt T now refers to cells A2 to A188. The label for these cells in cell, A1, is BIRTHWT.

Couri	er	- 8 -	-
b	irthwt T	▼ fx	3
	Name Box	В	
1	BIRTHWT	GESTAGE	
2	2.50		
3	2.70	37	

Calculate the Mean and Standard Deviation of the variable of interest, in this example it is Birth Weight. The formulae are:

=AVERAGE(birthwt) and =STDEV(birthwt) in cells A190 and A191

these cells are also named A190 is called mean and A191 is called stddev.

Next we need to create data for constructing a Normal curve.

Select cell A200 and enter -4 Select Edit | Fill ► Series... Enter 0.25 in the step value and 4 in the Stop value

These settings are sufficient to produce a reasonable curve

Series		? 🛛
Series in © <u>R</u> ows © <u>C</u> olumns	Type Linear Growth Date Auto <u>Fill</u>	Date unit © Day © Weekday © Month © Year
Step value: 0.25	Stop va	alue: 4

In cell B200, enter the formula =A200*stddev+mean The alternative version without using names would be =A200*A191+A

In cell C200, enter the formula =NORMDIST(B200,mean,stddev,FALSE). Alternative version would be =NORMDIST(B200,A\$190,A\$191,FALSE).

Copy B200:C200 down to match the cells containing data in Column A. This should end at row 232.

The first few rows should look like

	A	В	С
200	-4.00	1.17942	0.0002
201	-3.75	1.32236	0.0006
202	-3.50	1.4653	0.0015
203	-3.25	1.60825	0.0035
204	-3.00	1.75119	0.0078
205	-2.75	1.89414	0.0159
206	-2.50	2.03708	0.0307

Now we will create a histogram of the data.

Select Tools | Data Analysis... and chose Histogram from the list of Analysis tools

Enter Birthwt in the Input Range (Excel will change this to \$A\$2:\$A\$188 later). Enter or use the Bin Range as \$B\$200:\$B\$232. Select the Output Range and set it to \$E\$199 Check the Chart Output Click OK

Histogram		? 🔀
Input Input Range: Bin Range:	\$A\$2:\$A\$188 🛐 \$B\$200:\$B\$232 🛐	OK Cancel Help
Output options	\$E\$199 S	

Tidy up the histogram by:

- Clear the Legend
- Change the Title to Distribution of Birth Weight
- Change the X axis title to Weight (kg)
- Reduce the Number of decimal places shown in the Bin column (E200 to E232) to 1 decimal place using the Decrease Decimal button

• Change the Bar gap to zero by, Right click when the cursor is over a bar, select Format Data Series, select the Options tab change GapWidth to 0.

Now we will add the Normal Curve

Right click when the cursor is over a bar, select Source Data



Other editing includes:

- Right clicking over a in the Normal Curve and selecting Format Data Series.
- Removal of the symbols by selecting the Patterns tab and choosing None in the Markers tab.
- Changing the colour and weight of the Line

The data file for this is CHAPS.XLS

Useful Excel web sites

General Excel Information

Excel 2000 without Pain http://205.236.230.101/x1/default.htm

Useful introduction to Excel, but some of the later sections do not seem to have been completed.

Assume (The Association of Statistics Specialists Using Microsoft Excel) <u>http://www.jiscmail.ac.uk/files/ASSUME/welcome.html</u> This page provides links to various resources concerned with the use of Microsoft Excel in

This page provides links to various resources concerned with the use of Microsoft Excel in the practice and teaching of Statistics

University of Reading

Guidelines are a range of web documents covering Data Management and Statistics. Including <u>Using Excel for Statistics: Tips and Warnings</u> http://www.rdg.ac.uk/ssc/dfid/booklets/topxfs.html and <u>Disciplined Use of Spreadsheet</u> <u>Packages for Data Entry</u> http://www.rdg.ac.uk/ssc/dfid/booklets/topsde.html

Statistical Issues

University of Reading : <u>Good Statistical Practice Guidelines</u> http://www.rdg.ac.uk/ssc/dfid/booklets.html

Statistics: Making sense of Data

http://www.introductorystatistics.com/escout/main/contentshome.htm

'This revolutionary new statistics courseware combines an introductory text, simulation tools, graphical and analytical software, lab exercises and human quiz grading services in a single package using the web and Microsoft Excel.'

This courseware incorporates interactive tools like Box Sampler and Acrobat Reader® which you will need to have installed on your system. Box Sampler is a Microsoft Excel® add-in that you can use to construct simulations and resampling experiments. IT has some useful Excel

Statistical Glossary http://www.stats.gla.ac.uk/steps/glossary/index.html

Add-ons

XLStat <u>www.xlstat.com</u> This has 40 functions that are added into Excel providing additional data analysis and statistical features. A 30 day trial is available Prices Normal £169 Academic £135 Student £34

Numerical Algorithms Group (NAG) Statistical Add-ins for Excel <u>http://www.nag.co.uk/stats/ae_soft.asp</u>

Statistical Functions

Created by Norman Harker see web page: <u>http://www.contextures.com/functions.html</u> for a list of all Excel Functions

Name	Description	Syntax
AVEDEV	Returns the average of the absolute deviations of data points from their mean	=AVEDEV(Number1,Number2,)
AVERAGE	Returns the average (arithmetic mean) of up to 30 numeric arguments	=AVERAGE(Number1 ,Number2,)
AVERAGEA	Returns the average (arithmetic mean) of its arguments and includes evaluation of text and logical arguments	=AVERAGEA(Value1 ,Value2,)
BETADIST	Returns the cumulative beta probability density function	=BETADIST(x , alpha , beta ,A,B)
BETAINV	Returns the inverse of the cumulative beta probability density function	=BETAINV(probability,alpha,beta,A,B)
BINOMDIST	Returns the individual term binomial distribution probability	=BINOMDIST(number_s,trials, probability_s,cumulative)
CHIDIST	Returns the one-tailed probability of the chi- squared distribution	=CHIDIST(x,degrees_freedom)
CHIINV	Returns the inverse of the one-tailed probability of the chi-squared distribution	=CHIINV(probability,degrees_freedom)
CHITEST	Returns the value from the chi-squared (γ 2) distribution for the statistic and the appropriate degrees of freedom	=CHITEST(actual_range, expected_range)
CONFIDENCE	Returns the confidence interval for a population mean	=CONFIDENCE (alpha, standard_dev,size)
CORREL	Returns the correlation coefficient between two arrays of data	=CORREL(array1,array2)

COUNT	Counts the number of cells that contain numbers and also numbers within the	=COUNT(value1,value2,)
COUNTA	Counts the number of non- empty cells and the values within the list of arguments	=COUNTA(value1 ,value2,)
COUNTBLANK	Counts empty cells in a specified range of cells	=COUNTBLANK(value1,value2)
COUNTIF	Counts the number of cells within a range that meet the given criteria.	=COUNTIF(array1, criteria)
COVAR	Returns covariance; the average of the products of deviations for each data point pair	=COVAR(array1,array2)
CRITBINOM	Returns the smallest value for which the cumulative binomial distribution is less than or equal to a criterion value	=CRITBINOM(trials,probability_s, alpha)
DEVSQ	Returns the sum of the squares of the deviations from the sample mean	=DEVSQ(number1 ,number2,)
EXPONDIST	Returns the exponential distribution	=EXPONDIST(x,lambda,cumulative)
FDIST	Returns the F probability distribution	=FDIST(x,degrees_freedom1, degrees_freedom2)
FINV	Returns the inverse of the F probability distribution	=FINV(probability,degrees_freedom1, degrees_freedom2)
FISHER	Returns the Fisher transformation at x	$=$ FISHER (\mathbf{x})
FISHERINV	Returns the inverse of the Fisher transformation	=FISHERINV(y)
FORECAST	Calculates a predicted value of y for a given x value based on known values for x and y	=FORECAST(x,known_y's,known_x's)
FREQUENCY*	Counts how often values occur within given ranges of values and returns those counts as a vertical array of numbers	=FREQUENCY(data_array,bins_array)

FTEST	Returns the result of an F- test; the one-tailed probability that the variances in array1 and array2 are not significantly different	=FTEST(array1,array2)
GAMMADIST	Returns the gamma distribution	=GAMMADIST(x,alpha,beta, cumulative)
GAMMAINV	Returns the inverse of the gamma distribution	=GAMMAINV(probability,alpha,beta)
GAMMALN	Returns the natural logarithm of the gamma function $\Gamma(x)$.	=GAMMALN(x)
GEOMEAN	Returns the geometric mean of an array or range of positive data	=GEOMEAN(number1 ,number2,)
GROWTH	Calculates predicted exponential growth and returns the y-values for a series of specified new x- values by using known x- values and y-values	=GROWTH(known_y's, known_x's, new_x's,const)
HARMEAN	Returns the harmonic mean of a data set by calculating the reciprocal of the arithmetic mean of reciprocals	=HARMEAN(number1 ,number2,)
HYPGEOMDIST	Returns the hypergeometric distribution by calculating the probability of a given number of sample successes, given the sample size, population successes, and population size	=HYPGEOMDIST(sample_s , number_sample,population_s, number_population)
INTERCEPT	Calculates from given x and y values the point at which a line will intersect the y-axis	=INTERCEPT(known_y's,known_x's)
KURT	Returns the kurtosis of a data set; a measure that compares the relative peakedness or flatness of a distribution compared with the normal distribution	=KURT(number1 ,number2,)
LARGE	Returns the kth largest value in a data set	=LARGE(array,k)

LINEST	Entered as an array formula, LINEST returns an array that describes a line of best fit by using the	=LINEST(known_y's ,known_x's, const,stats)
LOGEST	least squares method Entered as an array formula, LOGEST calculates an exponential curve that fits known data and returns an array of values that describes that curve	=LOGEST(known_y's ,known_x's, const,stats)
LOGINV	Returns the inverse of the lognormal cumulative distribution function of x, where $ln(x)$ is normally distributed with given probability, mean, and standard deviation	=LOGINV(probability, mean, standard_dev)
LOGNORMDIST	Returns the cumulative lognormal distribution of x, where $ln(x)$ is normally distributed with known mean and standard deviation	=LOGNORMDIST(x,mean, standard_dev)
MAX	Returns the maximum value in a list of arguments ignoring logical values and text	=MAX(number1 ,number2,)
MAXA	Returns the maximum value in a list of arguments including logical values and text	=MAXA(value1 ,value2,)
MEDIAN	Returns the median of the given numbers	=MEDIAN(number1 ,number2,)
MIN	Returns the minimum value in a list of arguments ignoring logical values and text	=MIN(number1 ,number2,)
MINA	Returns the minimum value in a list of arguments including logical values and text	=MINA(value1 ,value2,)
MODE	Returns the most common value in a data set	=MODE(number1 ,number2,)

NEGBINOMDIST	Returns the negative binomial distribution; the probability that there will be number_f failures before the number_s-th success, when the constant	=NEGBINOMDIST(number_f, number_s, probability_s)
NORMDIST	probability of a success is probability_s Returns the cumulative distribution function or probability mass function for the value x with	=NORMDIST(x,mean, standard_dev, cumulative)
NORMINV	specified mean and standard deviation Returns the inverse of the normal cumulative	=NORMINV(probability,mean, standard dev)
	distribution for the specified probability, mean, and standard deviation	_ /
NORMSDIST	Returns the standard normal cumulative distribution function. The distribution has a mean of 0 and a standard deviation	=NORMSDIST(z)
NORMSINV	Returns the inverse of the standard normal	=NORMSINV(probability)
PEARSON	Returns the Pearson product moment	=PEARSON(array1,array2)
PERCENTILE	Returns the kth percentile	=PERCENTILE(array,k)
PERCENTRANK	Returns the percentage	=PERCENTRANK(array , x , significance)
PERMUT**	Returns the number of permutations for a given number of objects that can be selected from a number of objects without replacement	=PERMUT(number,number_chosen)
POISSON	Returns the Poisson distribution	=POISSON(x,mean,cumulative)

PROB	Returns either the probability that values in a range are between two limits or if upper_limit is not specified, the probability that values in x_range are equal to lower_limit	=PROB(x_range,prob_range, lower_limit, upper_limit)
QUARTILE	Returns the quartile of a data set	=QUARTILE(array,quart)
RANK	Returns the rank of a number in a list of numbers	=RANK(number,ref ,order)
RSQ	Returns the square of the Pearson product moment correlation coefficient through data points in known v's and known x's	=RSQ(known_y's,known_x's)
SKEW	Returns the skewness of a distribution	=SKEW(number1 ,number2,)
SLOPE	Returns the slope (vertical distance / horizontal distance) of the linear regression line through data points in known_y's and known x's	=SLOPE(known_y's,known_x's)
SMALL	Returns the kth smallest value in a data set	=SMALL(array,k)
STANDARDIZE	Returns a normalized value from a distribution with known mean and standard dev	=STANDARDIZE(x,mean, standard_dev)
STDEV	Estimates standard distribution based on a sample ignoring text and logical values	=STDEV(number1 ,number2,)
STDEVA	Estimates standard deviation based on a sample including text and logical values	=STDEVA(value1,value2,)
STDEVP	Calculates standard distribution based on the entire population ignoring text and logical values	=STDEVP(number1 ,number2,)
STDEVPA	Calculates standard deviation based on the entire population including text and logical values	=STDEVPA(value1 ,value2,)

STEYX	Returns the standard error of the predicted y-value for	=STEYX(known_y's,known_x's)
TDIST	Returns the probability for the Student t-distribution where a numeric value (x) is a calculated value of t for which the probability is to be computed	=TDIST(x,degrees_freedom,tails)
TINV	Returns the t-value of the Student's t-distribution based on given probability and degrees of freedom	=TINV(probability,degrees_freedom)
TREND	Entered as an array formula, TREND fits a straight line using the least squares method to arrays of known_y's and known_x's and returns the y-values along that line for the array	=TREND(known_y's ,known_x's, new_x's, const)
TRIMMEAN	of specified new_x's Calculates the mean by excluding a specified percentage of data points from the top and bottom tails of a data set	=TRIMMEAN(array,percent)
TTEST	Returns the probability associated with a student's	=TTEST(array1,array2,tails,type)
VAR	Estimates variance based on a sample ignoring logical values and text	=VAR(number1 ,number2,)
VARA	Estimates variance based on a sample including text and logical values	=VARA(value1 ,value2,)
VARP	Calculates variance based on the entire population ignoring text and logical values	=VARP(number1 ,number2,)
VARPA	Calculates variance based on the entire population including text and logical values	=VARPA(value1,value2,)
WEIBULL	Returns the Weibull distribution	=WEIBULL(x,alpha,beta,cumulative)
ZTEST	Returns the two-tailed P- value of a z-test	=ZTEST(array,x ,sigma)