#### **Summary of Functions in Excel and Numbers**

The following spreadsheet is a summary of all functions in Excel (Microsoft Office) versus Numbers '08 and Number '09 (Apple iWork '08 and iWork '09). Red cells indicate missing functions.

This summary was prepared by Jamie Curmi (http://curmi.com).

#### **Totals**

Function Groups	English Excel	Japanese Excel	Numbers '08	Numbers '09
Text Functions	23	34	22	22
Logical Functions	6	6	6	6
Date and Time Functions	21	21	14	31
Mathematical Functions	58	58	48	54
Financial Functions	54	54	27	37
Statistical Functions	80	80	33	69
Reference Functions	16	16	15	16
Information Functions	17	17	4	5
Engineering Functions	40	40	0	22
Database Functions	13	13	0	0
Total Functions	328	339	169	262

#### Some key points:

**Text Functions**: Almost all functions in Excel are available in Numbers - the exceptions being TEXT and the double byte character functions that are only available in Japanese Excel.

**Date and Time Functions**: There are no missing functions. In fact, Apple added a number of functions to do with duration that are not available in Excel.

**Mathematical Functions**: The missing functions are Array and Matrices related and a few more obscure functions.

**Financial and Statistical Functions**: This has improved a lot in Numbers '09. Missing numbers are much more obscure.

**Engineering Functions**: A big increase was made here in Numbers '09 - with particular focus on number conversions, providing more functionality in this area. Complex number functions are still not included, though are rarely used in Excel.

Other Functions: There are no Database functions in Numbers.

## **Text Functions**

## Summary

	English	Japanese	Numbers	Numbers
	Excel	Excel	'08	'09
Total Number	23	34	22	22

## **Compare Text**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
EXACT	V	V			
LEN	V	V	V	V	
MID	V	V	V	V	

### **Convert Text and Numbers**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
CLEAN	V	V	V	V	Numbers defines non-printing characters as Unicode characters 0-31. Excel does not define non-printing.
DOLLAR	V	V	V	V	Numbers default display of the example is -\$12,000, even though Number documentation says it should be like Excel, ie. (\$12,000).
FIXED		<b>V</b>			
LOWER	V	V	V	V	
PROPER	V	V	V	V	
Т	V	V	V	V	
TEXT	V	V			
TRIM	V	V	V	V	
UPPER	V	V	V	V	
VALUE	V	V	V	V	
YEN		V			

### **Locate Text**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
CHAR	V	<b>V</b>	V	V	Uses Unicode on Numbers. Japanese Excel uses ISO-2022-JP.
CODE	V	V	V	V	Uses Unicode on Numbers. Japanese Excel uses ISO-2022-JP.
FIND	V			V	
LEFT	V			V	
RIGHT	V		V	V	
SEARCH	V	<b>V</b>	V	V	Numbers documentation in '08 does not mention the use of "~" in order to match a "*" or "?" (i.e. "~?" to search for a "?"). This does work, as it does on Excel. It does in '09.

## **Replace and Combine Text**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
CONCATENATE	V	V	V		
REPLACE	V	V	V		
REPT	V	V	V		
SUBSTITUTE	V	V	V	V	

#### **Double Byte Text**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
ASC		V			Does not give an error in English Excel, but doesn't actually do anything.
JIS		V			
FINDB		V			Does not give an error in English Excel, but does not behave as specified, instead acting as FIND
LEFTB		V			Does not give an error in English Excel, but does not behave as specified, instead acting as LEFT
LENB		V			Does not give an error in English Excel, but does not behave as specified, instead acting as LEN
MIDB		V			
PHONETIC		V			
REPLACEB		V			Does not give an error in English Excel, but does not behave as specified, instead acting as REPLACE
RIGHTB		V			Does not give an error in English Excel, but does not behave as specified, instead acting as RIGHT
SEARCHB		V			Does not give an error in English Excel, but does not behave as specified, instead acting as SEARCH

## **Logical Functions**

#### Summary

	English	Japanese	Numbers	Numbers
	Excel	Excel	'08	'08
Total Number	6	6	6	6

### Logical

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
AND	V	V	V	<b>V</b>	
IF	V	V		V	
NOT	V	V	V	V	
OR	V	V	V	V	
FALSE	V	V	V	V	
TRUE	V	V	V	V	

## **Date and Time Functions**

## Summary

	English	Japanese	Numbers	Numbers
	Excel	Excel	'08	'09
Total Number	21	21	14	31

## Date

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
DATE	V	V	V	V	
DATEDIF	V			V	
DATEVALUE	V			V	
DAY	V	V	V	V	
DAYNAME				V	New in Numbers '09
DAYS360	V			V	Numbers '09 adds optional 3rd argument for use-euro-method in calculations
EDATE	V			V	
EOMONTH	V			V	
MONTH	V			V	
MONTHNAME				V	New in Numbers '09
NETWORKDAYS	V			V	
TODAY	V	V	V	V	
WEEKDAY	V			V	
WEEKNUM	V	V		V	
WORKDAY	V			V	
YEAR	V	V	V	V	
YEARFRAC	V			V	

## Time

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
HOUR	V	V			
MINUTE	V	V	V	<b>V</b>	
NOW	V	V	V	V	
SECOND	V	V	V	V	
TIME	V	V	V	V	
TIMEVALUE	V	V	V	V	

### **Duration**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
DUR2DAYS				V	New in Numbers '09
DUR2HOURS				V	New in Numbers '09
DUR2MILLISECONDS				V	New in Numbers '09
DUR2MINUTES				V	New in Numbers '09
DUR2SECONDS				V	New in Numbers '09
DUR2WEEKS				V	New in Numbers '09
DURATION	•	•	•	V	New in Numbers '09 Note that Excel has a different function DURATION used in Financial calculations - see Financial Functions
STRIPDURATION				V	New in Numbers '09

## Summary

**Mathematical Functions** 

	English	Japanese	Numbers	Numbers
	Excel	Excel	'08	'09
Total Number	58	58	48	54

### **Arithmetic**

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Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
ABS	V	V	V	V	
EXP	V	V	V	<b>V</b>	
FACT	V	V	<b>V</b>	<b>V</b>	
GCD	V	V	V	V	
LCM	V	V	V	V	
MOD	V	V	V	V	
POWER	V	V	V	<b>V</b>	
PRODUCT	V	V	V	V	
QUOTIENT	V	V	V	V	
SIGN	V	V	V	V	
SQRT	V	V	V	V	
SUM	V	V	V	V	

#### **Arrays and Matrices**

Arrayo arra mati	Arrayo una matrioco										
Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes						
MDETERM	V	V									
MINVERSE	V	V									
MMULT	V	V									
MULTINOMIAL	<b>V</b>	<b>V</b>		<b>V</b>							

### Logarithms

9					
Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
LN	V	V	V	V	
LOG	V	V	V	V	
LOG10					

### **Random Numbers**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
RAND	V	V	V		
RANDBETWEEN	<b>V</b>	<b>V</b>	V		

## **Rounding Numbers**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
CEILING	V	V	<b>V</b>	<b>V</b>	
COMBIN	V	V	<b>V</b>	<b>V</b>	
EVEN	V			<b>V</b>	
FLOOR	V	V	V	<b>V</b>	
INT	V			<b>V</b>	
MROUND	V	V	<b>V</b>	<b>V</b>	
ODD	V			<b>V</b>	
ROUND	V	V	V	<b>V</b>	
ROUNDDOWN	V			<b>V</b>	
ROUNDUP	V	V	V	V	
TRUNC	V	V	V	V	

## **Special Numbers**

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Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
PI	V	V	V	V	
ROMAN	V	V	V	V	
SQRTPI	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel

## Summation

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
SERIESSUM	V	V			Need to install Analysis ToolPak add-in for this to work in Excel
SUBTOTAL	V	V			
SUMIF	V			V	
SUMIFS				V	New in Numbers '09
SUMPRODUCT	V	V	V	V	
SUMSQ	V	V	V	V	
SUMX2MY2	V	V		V	
SUMX2PY2	V	V		V	
SUMXMY2	<b>✓</b>	V		V	

Trigonometry					
Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
ACOS	V	V	<b>V</b>	<b>V</b>	
ACOSH	V	V		<b>✓</b>	
ASIN	V	V	V	V	
ASINH	V	V	V	V	
ATAN	V	V		<b>~</b>	
ATAN2	V	V	V	<b>✓</b>	
ATANH	V	V		<b>✓</b>	
cos	V	V	V	<b>✓</b>	
COSH	V	V		<b>✓</b>	
DEGRESS	V	V	V	V	
RADIANS	V	V		<b>✓</b>	
SIN	V	V	V	<b>✓</b>	
SINH	V	V	V	V	
TAN	V	V	V	V	
TANH	V	V	V	V	

Financial Functions

Summary

	English	Japanese	Numbers	Numbers
	Excel	Excel	'08	'09
Total Number	54	54	27	37

#### **Currency Conversion**

Ouriency Convers	31011				
Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
DOLLARDE	V	V			
DOLLARFR	V	V			
EUROCONVERT	<b>V</b>	<b>V</b>			

## Coupons

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
COUPDAYBS	V	V			
COUPDAYS	V	V	<b>V</b>	<b>V</b>	
COUPDAYSNC	V	V			
COUPNCD	V	V			
COUPNUM	V	V	V	V	
COUPPCD	V	V			

## Depreciation

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
MORDEGRC	V	V			
MORLINC	V	V			
)B	V	V	V	V	
DB	V	V	<b>V</b>	V	
LN	V	V	V	V	
YD	V	V	V	V	
DB	V	V	V	V	

#### Interest

IIILETESI					
Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
СИМІРМТ	<b>✓</b>	V			
CUMPRINC	V	V		V	
EFFECT	<b>✓</b>	V			
FV	V	V		V	
FVSCHEDULE	<b>✓</b>	V			
INTRATE	V	V		V	
IPMT	<b>✓</b>	V			
IRR	V	V		V	
ISPMT	<b>V</b>	V	V	V	
MIRR	V	V	V	V	
NOMINAL	V	V		V	

## Investments

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
NPER	V	V	<b>V</b>		
NPV	V	V	<b>V</b>	V	
PMT	V	V			
PPMT	V	V	V	V	
PV	V	V	V	V	
RATE	V	V	V	V	
XIRR	V	V			
XNPV	V	V			

## Securities

Securities Function	English	Japanese	Numbers	Numbers	Notes
	Excel	Excel	'08	'09	
ACCRINT	V	V	V	V	
ACCRINTM	V	V		$\checkmark$	
BONDDURATION				V	New in Numbers '09
BONDMDURATION				V	New in Numbers '09
DISC	V				
DURATION	V	V			Note that Numbers '09 has a DURATION function different from the function here - see Date and Time Functions
MDURATION	V	V			
ODDFPRICE	V	V			
ODDFYEILD	V	V			
ODDLPRICE	V	V			
ODDLYIELD	V				
PRICE	V	V	V	V	
PRICEDISC	V		V	V	
PRICEMAT	V	V	V	V	
RECEIVED	V	V		V	
YIELD	V	V		V	
YIELDDISC	V	V		V	
YIELDMAT	V	V		V	

# Treasury Bills

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
TBILLEQ	V	V			
TBILLPRICE					
TBILLYIELD	V				

**Statistical Functions** 

Summary

	English	Japanese	Numbers	Numbers
	Excel	Excel	'08	'09
<b>Total Number</b>	80	80	33	69

**Count and Average** 

Count and Avera					
Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
AVEDACE	■ EXCEI	■ CXCeI	<b>✓</b>	<b>✓</b>	
AVERAGE					
AVERAGEA	V	V	V	V	
AVERAGEIF				V	New in Numbers '09
AVERAGEIFS				V	New in Numbers '09
COUNT		V			
COUNTA		V			
COUNTBLANK	V	V	V	<b>V</b>	
COUNTIF	V	V	V	<b>V</b>	
COUNTIFS				V	New in Numbers '09
KURT	V	V			
LARGE	V	V	V	V	
MAX	V	V	V	V	
MAXA	V	V	V	V	
MIN	V	V	V	V	
MINA	V	V		V	
MODE		V	<b>V</b>		
PERCENTILE		V			
PERCENTRANK	V	V		V	
PERMUT	V	V		V	
QUARTILE	V	V		V	
RANK	V	V	V	V	
SMALL	V	V	V	V	

#### **Mean and Deviation**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
AVEDEV	V	V	V	V	
CONFIDENCE	V	V	V	V	
COVAR	V	<b>V</b>	V	V	
DEVSQ	V	V		V	
GEOMEAN	V			V	
HARMEAN	V	<b>V</b>		<b>✓</b>	
MEDIAN	V			<b>✓</b>	
STDEV	V	<b>V</b>	<b>✓</b>	<b>✓</b>	
STDEVA	V	V	V	V	
STDEVP	V	V	V	V	
STDEVPA	V	V	V	V	
TRIMMEAN	V	V			

Probability and Distribution							
Function	English	Japanese	Numbers	Numbers	Notes		
	Excel	Excel	'08	'09			
BETADIST	V	V		<b>V</b>			
BETAINV	V	V		<b>V</b>			
BINOMDIST	V	V		V			
CHIDIST	V	V		V			
CHIINV	V	V		V			
CHITEST	<b>✓</b>	<b>V</b>		<b>✓</b>			
CRITBINOM	V	V		<b>V</b>			
EXPONDIST	V	V		V			
FDIST	V	V		V			
FINV	V	V		V			
FREQUENCY	V	V		V			
FTEST	V	V					
GAMMADIST	V	V		V			
GAMMAINV	V	V		V			
GAMMALN	V	V		V			
HYPGEOMDIST	V	V					
LOGINV	V	V		$\checkmark$			
LOGNORMDIST	V	V		$\checkmark$			
NEGBINOMDIST	V	V		V			
NORMDIST	V	V		V			
NORMINV	V	V		V			
NORMSDIST	V	V		V			
NORMSINV	V	V		V			
POISSON	V	V	V	V			
PROB	V	V	V	V			
SKEW	V	V					
TDIST	V	V		V			
TINV	V	V		V			
TTEST	V	V		V			
WEIBULL	V	V					
ZTEST	V	V		V			

Regression

riegression					
Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
INTERCEPT	V	V	V	V	
SLOPE	V	V	V	V	
STEYX					

iransformation a	ransformation and Correlation										
Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes						
CORREL	V	V	V								
FISHER	V	V									
FISHERINV	V	V									
PEARSON	V	V									
RSQ	V	V									
STANDARDIZE											

# **Trends**

Helius					
Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
FORECAST	V	V	V	V	
GROWTH	V	V			
LINEST	V			V	
LOGEST	V	V			
TREND	<b>V</b>				

# **Variance**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
VAR		V	V		
VARA	V	V	V		
VARP		V			
VARPA	V	V	V	V	

## **Reference Functions**

## Summary

	English	Japanese	Numbers	Numbers
	Excel	Excel	'08	'09
Total Number	16	16	15	16

#### Reference

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
ADDRESS	V		V	V	
AREAS	V	V	<b>✓</b>	<b>✓</b>	
CHOOSE	V		<b>✓</b>	<b>✓</b>	
COLUMN	V	V	<b>✓</b>	<b>✓</b>	
COLUMNS	V		<b>✓</b>	<b>✓</b>	
HLOOKUP	V	V	<b>✓</b>	<b>✓</b>	
HYPERLINK	V		<b>✓</b>	<b>✓</b>	
INDEX	V	V	<b>✓</b>	<b>✓</b>	
INDIRECT	V		<b>✓</b>	<b>✓</b>	
LOOKUP	V		<b>✓</b>	<b>✓</b>	
MATCH	V		<b>✓</b>	<b>✓</b>	
OFFSET	V	V	<b>✓</b>	<b>✓</b>	
ROW	V		<b>✓</b>	<b>✓</b>	
ROWS	V	V	V	V	
TRANSPOSE	V	V		V	
VLOOKUP	V	V	V	V	

**Information Functions** 

## Summary

	English	Japanese	Numbers	Numbers
	Excel	Excel	'08	'09
Total Number	17	17	4	5

### Information

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
CELL	V	V			
ERROR.TYPE	V	V			
IFERROR				V	New in Numbers '09
INFO	V	V			
ISBLANK	V		V	V	
ISERR	V	V			
ISERROR	V		V	V	
ISEVEN	V	V	V	V	
ISLOGICAL	V				
ISNA	V	<b>✓</b>			
ISNONTEXT	V				
ISNUMBER	V				
ISODD	V		V	V	
ISREF	V	<b>✓</b>			
ISTEXT	V	<b>V</b>			
N	V	V			
NA	V	V			
TYPE	V	V			

## Summary

**Engineering Functions** 

	English	Japanese	Numbers	Numbers
	Excel	Excel	'08	'09
Total Number	40	40	0	22

## **Bessel Functions**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes	
BESSELI					Need to install Analysis ToolPak add-in for this to work in Excel	
BESSELJ	V	V			Need to install Analysis ToolPak add-in for this to work in Excel	
BESSELK					Need to install Analysis ToolPak add-in for this to work in Excel	
BESSELY	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel	

## **Complex Numbers**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes		
COMPLEX	V	V			Need to install Analysis ToolPak add-in for this to work in Excel		
IMABS					Need to install Analysis ToolPak add-in for this to work in Excel		
IMAGINARY					Need to install Analysis ToolPak add-in for this to work in Excel		
IMARGUMENT					Need to install Analysis ToolPak add-in for this to work in Excel		
IMCONJUGATE					Need to install Analysis ToolPak add-in for this to work in Excel		
IMCOS	$\checkmark$				Need to install Analysis ToolPak add-in for this to work in Excel		
IMDIV					Need to install Analysis ToolPak add-in for this to work in Excel		
IMEXP	$\checkmark$				Need to install Analysis ToolPak add-in for this to work in Excel		
IMLN					Need to install Analysis ToolPak add-in for this to work in Excel		
IMLOG10	$\checkmark$				Need to install Analysis ToolPak add-in for this to work in Excel		
IMLOG2					Need to install Analysis ToolPak add-in for this to work in Excel		
IMPOWER					Need to install Analysis ToolPak add-in for this to work in Excel		
IMPRODUCT					Need to install Analysis ToolPak add-in for this to work in Excel		
IMREAL					Need to install Analysis ToolPak add-in for this to work in Excel		
IMSIN					Need to install Analysis ToolPak add-in for this to work in Excel		
IMSQRT	V	V			Need to install Analysis ToolPak add-in for this to work in Excel		
IMSUB	V	V			Need to install Analysis ToolPak add-in for this to work in Excel		
IMSUM	V	<b>~</b>			Need to install Analysis ToolPak add-in for this to work in Excel		

#### **Number Conversion**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes		
BASETONUM				<b>V</b>	New in Numbers '09		
BIN2DEC	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel		
BIN2HEX	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel		
BIN2OCT	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel		
CONVERT	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel Number '09 has additional support for "Week" and speed conversions		
DEC2BIN	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel		
DEC2HEX	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel		
DEC2OCT	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel		
HEX2BIN	V			V	Need to install Analysis ToolPak add-in for this to work in Excel		
HEX2DEC	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel		
HEX2OCT	V			V	Need to install Analysis ToolPak add-in for this to work in Excel		
NUMTOBASE				V	New in Numbers '09		
OCT2BIN	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel		
OCT2DEC	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel		
OCT2HEX	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel		

### **Tests and Errors**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
DELTA					Need to install Analysis ToolPak add-in for this to work in Excel
ERF	V			V	Need to install Analysis ToolPak add-in for this to work in Excel
ERFC	V			<b>~</b>	Need to install Analysis ToolPak add-in for this to work in Excel
FACTDOUBLE	V	V		<b>V</b>	Need to install Analysis ToolPak add-in for this to work in Excel
GESTEP	V	V		V	Need to install Analysis ToolPak add-in for this to work in Excel

## **Database Functions**

### Summary

	English	Japanese	Numbers	Numbers
	Excel	Excel	'08	'09
<b>Total Number</b>	13	13	0	0

#### **Database**

Function	English Excel	Japanese Excel	Numbers '08	Numbers '09	Notes
DAVERAGE	V	V			
DCOUNT	V	V			
DCOUNTA	V				
DGET	V	V			
DMAX	V				
DMIN	V	V			
DPRODUCT	V				
DSTDEV	V	V			
DSTDEVP	V				
DSUM					
DVAR	V	<b>V</b>			
DVARP	V	V			
GETPIVOTDATA	V	V			