

ARITHMETIC AND LOGICAL OPERATORS

Operations with larger precedence numbers are performed first, unless overridden by parentheses. Operations with equal precedence are performed left-to-right.

Operator	Meaning	Precedence #
\wedge	Exponentiation	7
+	Positive	6
-	Negative	6
*	Multiplication	5
/	Division	5
+	Addition	4
-	Subtraction	4
=	Equals	3
<	Less than	3
<=	Less than or equal	3
>	Greater than	3
>=	Greater than or equal	3
<>	Not equal	3
#NOT#	Logical <i>not</i>	2
#AND#	Logical <i>and</i>	1
#OR#	Logical <i>or</i>	1



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QUICK REFERENCE GUIDE

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1-2-3 COMMANDS

/Worksheet Commands

Global	Overall worksheet settings
Format	Number/Formula display
Label-Prefix	Alignment of labels
Column-Width	1-72 characters
Recalculation	Formula recalculation procedures
Protection	Enable/Disable cell protection
Default	Standards for printing, current disk
Insert	Create empty rows/columns
Delete	Eliminate rows/columns
Column-Width	1-72 characters
Erase	Erase worksheet and settings
Titles	Freeze rows/columns onscreen
Window	Split/Unsplit display window
Status	Display global settings

/Range Commands

Format	Number/Formula display
Label-Prefix	Alignment of labels
Erase	Erase cell entries
Name	Maintain set of names for ranges
Justify	Adjust width of label "paragraph"
Protect	Disallow changes to cells (if Protection Enabled)
Unprotect	Allow changes to cells
Input	Restrict pointer to unprotected cells

/Copy Command

Copy entries to new location(s)

/Move Command

Move entries to new location

/File Commands

Retrieve	Restore data from <i>worksheet file</i>
Save	Store entire worksheet in <i>worksheet file</i>
Combine	Incorporate (part of) <i>worksheet file</i> into current worksheet: methods: Copy, Add, Subtract use Entire-File or Named-Range only
Xtract	Store range of entries in worksheet file: save Formulas and current Values only
Erase	Erase one or more 1-2-3 datafiles
List	List names of 1-2-3 datafiles, report disk space

(/File Commands, cont.)

Import	Incorporate <i>print file</i> into worksheet: treat lines as Text or as Numbers and quoted text
Directory	Change <i>current directory</i> assignment

/Print Commands

Printer vs. File	Direct output to printer or <i>print file</i>
Range	Range to be printed
Line	Advance printer one line
Page	Advance to top of next page
Options	Page formatting
Header, Footer	Set page header/footer line
Margins	Left, Right, Top, Bottom
Borders	Graft extra columns/rows to print Range
Setup	Set printer-control characters
Page-Length	Set number of lines
Other	As-Displayed vs. Cell Formulas: Printing of formula texts
	Unformatted vs. Formatted: Suppress headers, footers, page breaks
Clear	Cancel print settings
Align	Reset line-number counter to 1
Go	Print the selected range

/Graph Commands

Type	Select graph type
X A B C D E F	Set graph data ranges
Reset	Cancel graph settings
View	Display graph
Save	Save graph image in <i>graph file (.PIC)</i>
Options	
Legend	Enter graph legends (A-F)
Format	Set method of displaying Line and XY data: Lines, Symbols, Both, Neither
Titles	Enter title text: axes, graph
Grid	Overlay with horizontal/vertical lines
Scale	Set/Format numeric axis scales
Color vs. B&W	Monitor display method (color has no effect)
Data-Labels	Range of entries to label data points
Name	Maintain set of names for groups of graph settings: Create, Use, Delete, Reset

(1-2-3 Commands, cont.)

/Data Commands

Fill	Enter number series in a range
Table	Tabulate formula values as <i>Input</i> entries vary
Sort	Sort data records
Data-Range	Set range to sort
Primary-Key	Set first column to sort on
Secondary-Key	Set second ("tiebreaker") column to sort on
Reset	Cancel sort settings
Go	Perform the sort
Query	Select data records from a database
Input	Range containing database
Criterion	Range containing record-selection criteria
Output	Range to receive copies of records
Find	Highlight selected records (Input, Criterion ranges required)
Extract	Make (partial) copies of selected records (Input, Criterion, Output ranges required)
Unique	Make (partial) copies of selected records— no duplicate copies (Input, Criterion, Output ranges required)
Delete	Delete selected records (Input, Criterion ranges required)
Reset	Cancel query settings
Distribution	Calculate frequency distribution

/Quit Command

End 1-2-3 session (Be sure to save your work first!)

PRINTGRAPH COMMANDS

Select	Select graphs to print
Options	Formatting options
Color	Colors for parts of graphs:
Grid	Gridwork and text
A B C D E F	Data range (A-F): Available colors displayed
Font	Type fonts:
1	Font for first line
2	Font for rest of graph (if omitted, Font 1 used)
Size	Size and placement of graph
Full vs. Half	One or two graphs per page
Manual	Adjust size settings manually:
Left, Top	Margin
Width, Height	Overall dimensions
Rotation	Clockwise rotation of image
Pause	Pause between printing graphs
Eject	Page eject between printing graphs
Go	Print the selected graphs
Configure	Configure PrintGraph to system hardware
Files	Drives to search for data files
Pictures	Drive to search for Picture (graph) files
Fonts	Drive to search for Font files
Device	Graphics printer
Page	Default page size
Length	Default page length
Width	Default page width
Interface	Interface for graphics device: two parallel, two serial
Save	Record configuration in GRAPH.CNF
Reset	Resets "unsaved" configuration settings to default
Align	Make current paper position "top of form"
Page	Advance paper to top of next page
Quit	End PrintGraph program

FUNCTION KEYS

f1: Help	Display Help screens—press [Esc] to return to Ready Mode
f2: Edit	Switch to/from Edit Mode for current entry
f3: Name	(Point Mode only) Display menu of range names
f4: Abs	(Point Mode only) Make/Unmake cell addresses "absolute"
f5: GoTo	Move cell pointer to a particular cell
f6: Window	(Split-screen only) Move cell pointer to other window
f7: Query	Repeat most recent Data Query operation
f8: Table	Repeat most recent Data Table operation
f9: Calc	Ready Mode: Recalculate worksheet Value and Edit Modes: Convert formula to its current value
f10: Graph	Draw graph according to most recent graphing specifications
f12: Scroll Lock	Change meaning of arrow keys—when ON, keys move the window over the worksheet
([Shift]-[f4])	

Mathematical Functions

@ABS(x)	Absolute value of x
@ACOS(x)	Arc cosine
@ASIN(x)	Arc sine
@ATAN(x)	2-quadrant arc tangent
@ATAN2(x,y)	4-quadrant arc tangent of y/x
@COS(x)	Cosine
@EXP(x)	Exponential
@INT(x)	Integer part
@LN(x)	Log base e
@LOG(x)	Log base 10
@MOD(x,y)	x mod y
@PI	$\pi = 3.141592653589794$
@RAND	Random number between 0 and 1
@ROUND(x,n)	Round number x to n decimal places
@SIN(x)	Sine
@SQRT(x)	Square root
@TAN(x)	Tangent

Logical Functions

When determining the truth value of a formula, 1-2-3 considers any non-zero value to be **TRUE**. Only 0 itself is **FALSE**.

@FALSE	0 (FALSE)
@TRUE	1 (TRUE)
@IF(cond,x,y)	x if cond is TRUE (non-zero) y if cond is FALSE (zero)
@ISNA(x)	1 (TRUE) if x = NA
@ISERR(x)	1 (TRUE) if x = ERR

Special Functions

@NA	NA (not available)
@ERR	ERR (error)
@CHOOSE(x,v0,v1,...,vN)	Select value
@HLOOKUP(x,range,offset)	Table lookup with index row
@VLOOKUP(x,range,offset)	Table lookup with index column

Financial Functions

@IRR(guess,range)	Internal rate of return
@NPV(x,range)	Net present value
@FV(pmt,int,term)	Future value
@PV(pmt,int,term)	Present value
@PMT(prn,int,term)	Payment

Date Functions

These functions generate the *serial numbers* by which 1-2-3 identifies days, from 1=01-Jan-1900 to 73049=31-Dec-2099. Use any of the three "date" numeric display formats to make numbers appear in date form (e.g. 30-Apr-84).

@DATE(yr,mth,day)	Number (1..73049) of specified day
@DAY(yr,mth,day)	Day (1..31) of specified day
@MONTH(yr,mth,day)	Month (1..12) of specified day
@YEAR(yr,mth,day)	Year (0..199) of specified day
@TODAY	Today's number (e.g. Nov 11, 1983 = 30631)

Database Statistical Functions

These counterparts to the statistical functions operate on particular fields of records selected from a database. The selection process is exactly the same as with the /Data Query command:

@Dxxx(inp_range,col_offset,crit_range)

- The *inp_range* argument identifies the Input range — the database itself.
- The *crit_range* argument identifies the Criterion range.

Together, these two ranges determine a set of selected records.

- The *col_offset* argument identifies the field (column) of the selected records to be used in the statistical analysis (leftmost field = 0).

@DCOUNT	Field count
@DSUM	Field sum
@DAVG	Field average
@DMIN	Field minimum
@DMAX	Field maximum
@DSTD	Field standard deviation ("N" method)
@DVAR	Field variance ("N" method)

Note: Blank cells in a range are ignored. Label entries are equivalent to the number zero.

Statistical Functions

@COUNT(list)	Number of argument values
@SUM(list)	Sum of values
@AVG(list)	Average value
@MIN(list)	Minimum value
@MAX(list)	Maximum value
@STD(list)	Standard deviation ("N" method)
@VAR(list)	Variance ("N" method)

list: any number of arguments, separated by commas. Use any type of argument: number, formula, cell address, range specification, or range name.

Note: Blank cells in a range are ignored. Label entries are equivalent to the number zero.

KEYBOARD MACROS— NAMES FOR SPECIAL KEYS

(uppercase and lowercase letters equivalent)

Control and Editing Keys

~	{Return} key
{Esc}	{Esc} key
{BS}	{Backspace} key
{Del}	{—Char} or {DEL} keys
{?}	Pause to accept keystrokes until {Return} is pressed

Pointer-Movement Keys

{Up}	{Down}	{Left}	{Right}
{Home}	{End}	{PgUp}	{PgDn}

Function Keys

{Edit}	f2	{GoTo}	f5	{Table}	f8
{Name}	f3	{Window}	f6	{Calc}	f9
{Abs}	f4	{Query}	f7	{Graph}	f10

The /X Commands

/XC*location* ~ Call
Continue reading keystrokes at *location* (cell address, range, or range name). When a /XR command is encountered, return to the point just beyond the /XC *location* ~ command.

/XR ~ Return
(Must follow /XC command) Return to reading keystrokes just after the corresponding /XC *location* ~ command.

/XG*location* ~ GoTo
Continue reading keystrokes at *location* (cell address, range, or range name). No "return" is possible.

/XI*condition* ~ ... If-Then
If the *condition* is **TRUE** (i.e. has a non-zero value), continue reading keystrokes in the same cell. If the *condition* is **FALSE** (i.e. zero), continue reading keystrokes in the cell below.

/XM*location* ~ Process a Menu
Allow user to make a menu choice, and branch on the choice. 1-2-3 constructs the menu from the menu range whose upper left corner is *location* (cell address, range, or range name).

/XL*string* ~ *location* ~ Label Entry
/XN*string* ~ *location* ~ Number Entry
Display the specified *string* as a prompt in the control panel, accept an entry from the keyboard, and store the result as a left-justified label (/XL) or as a number (/XN) at *location*.

/XQ

End macro execution and return to Ready mode.

Quit

ENTRY-EDITING KEYS

Value Mode and Label Mode

{Backspace}	Erase character preceding cursor
{Esc}	Erase entire entry
f2 {Edit}	Switch to Edit Mode
f9 {Calc}	Convert formula to its value
{Break}	Erase entire entry

Edit Mode

{Backspace}	Erase character preceding cursor
{—Char} or {DEL}	Erase character at cursor
{Esc}	Erase entire entry
{Break}	Erase entire entry
f2 {Edit}	Return to Value or Label Mode
f9 {Calc}	Convert formula to its value
◀	Move 1 character left
▶	Move 1 character right
{BackTab}	Move 5 characters left
{Tab}	Move 5 characters right
▼	Move to first character
{Select}	Move to last character

NAMES FOR 1-2-3 DATA FILES

Names assigned to 1-2-3 worksheet, print, and graph (picture) files may be at most eight characters long, and must consist of these characters only:

A B . . Z a b . . z 0 1 . . 9 _ (underscore)

Notes:

- Uppercase and lowercase letters are equivalent.
- Don't try to enter a filename extension. 1-2-3 automatically uses these extensions:
.WKS worksheet file
.PRN print (text) file
.PIC graph (picture) file
- To specify a file that is not stored on the current disk, use a disk prefix:
C:SALESFIG B:JAN_JUN

Specifying a disk prefix causes 1-2-3 to use the directory that was most recently made current on that disk.