

MULTIPLAN™  
Electronic Worksheet

Quick Reference Guide

TRS-80 Model 4

Moving the Cell Pointer, Scrolling

(up arrow) (down arrow) (left arrow) (right arrow)	(Direction Keys) Move cell pointer in direction indicated. Continue moving cell pointer to scroll contents of window.
F1 then F1	(Home) Moves cell pointer to R1C1.
CTRL-Z	(End) Moves cell pointer to lower right corner of the active portion of the worksheet.
CTRL-W or ;	(Next Window) Moves cell pointer to next window.
F2	(Next Unlocked Cell) Moves cell pointer to next unlocked, nonblank cell.
F1 then Arrow Key	(Page Scroll) Scroll to show the next window-sized section of the worksheet in the indicated direction.

See also: GOTO commands.

Action Keys

BREAK	(Cancel) Cancels present operation and returns to the main command menu.
ENTER or (SHIFT) (↓)	(Return) Starts a command selected from a menu or carries out a completed command.
SPACE	Selects next item on menu.
CTRL-X or (SHIFT) (←)	Selects previous item on menu.
F3	Moves to, and selects, entire contents of next field in command line.
?	Requests information about the selected command or command in progress.

!	Recalculates entire worksheet. If typed in a formula, the formula will be replaced by its result.
=, +, 0, 1,...9	Invoke the Value command.

Editing Keys

Editing keys may be used any time command parameters are filled in. Text may be inserted in front of the selection just by typing it. Exceptions:

- after a Tab (see above), the proposed response will be replaced by what is typed;
- in reference fields, the characters typed are appended to the proposed response when appropriate.

CTRL-X or (SHIFT) (←)	Deletes character to the left of the selection.
CTRL-Y (SHIFT) (→)	(Delete) Deletes selected characters. Replacement text may be typed in.
CTRL-< or (SHIFT) (↑)	(Character Left) Selects character to the left of the current selection.
CTRL->	(Character Right) Selects character to the right of the current selection.
CTRL-O	(Word Left) Selects word to the left of the current selection.
CTRL-P	(Word Right) Selects word to the right of the current selection.
@	(Reference) Changes relative references to absolute.
Direction Keys	May be used to insert a relative reference to the cell pointed at; step through a set of legal values for a command parameter; insert a name in a formula when preceded by @.
CLEAR-;	Generates a caret (^) symbol used to enter printer control codes and acts as the exponentiation operator.
CLEAR-ENTER	Generates an underline ( _ ) symbol in an Alpha field.

Formulas

Formulas may be composed of constants, references to cells, and functions.

Numeric Constants

May be written in standard notation (e.g., 3.14 16) or scientific notation (e.g., 1.5E6).

Text Strings

Must be enclosed in double quotes (e.g., "\$"), when in formulas.

Absolute References

Rn or Cn	Specifies row number <i>n</i> (1 to 255) or column number <i>n</i> (1 to 63).
Rn:m or Cn:m	Range of rows or columns.

Relative References

R or C	The active row or column.
R[ + <i>n</i> ] or C[ + <i>n</i> ]	Row <i>n</i> below the active row or the column <i>n</i> to the right of the active column. The + sign may be omitted.
R[ - <i>n</i> ] or C[ - <i>n</i> ]	Row <i>n</i> above the active row or the column <i>n</i> to the left of the active column.

A pair of R and C forms may be juxtaposed to denote the intersection of the references; e.g., RnCm is an absolute reference to a single cell, RC[ - 1] is the cell to the left of the active cell.

Names

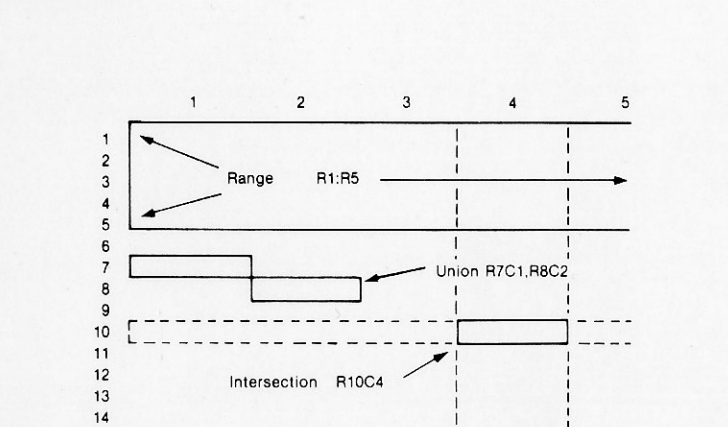
Must start with a letter; may contain letters, digits, periods, and underscores. Names may be defined to refer to any cell or group of cells.

Operations on Groups of Cells

:	Specifies a range: the smallest rectangle that includes both operands (e.g., R1:R5 means rows 1 through 5).
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,	Specifies a union (e.g., R7C1,R8C2 means the cell in row 7, column 1 and the cell in row 8, column 2).
(space)	Specifies an intersection: the cell(s) that belong to both operands (e.g., R10C4 is the single cell where row 10 intersects with column 4).

Example



Functions

Operations on Numeric and Text Values

+	Add
-	Subtract
/	Divide
*	Multiply
^	Exponentiation
%	Percent, same as /100
&	String concatenation



Functions of Groups of Cells

AND(List)	True if (and only if) all values are true; otherwise returns false.
AVERAGE(List)	The average of the values (SUM/COUNT).
COUNT(List)	Number of values given as arguments or by reference.
MAX(List)	Largest of the values.
MIN(List)	Smallest of the values.
NPV(Rate,List)	Net present value of the cash flow represented by the values on the list.
OR(List)	True if (and only if) any of the values are true; otherwise returns false.
STDEV(List)	The standard deviation of the values.
SUM(List)	The sum of the values.

Mathematical, Logical, and Text Functions

ABS(N)	Absolute value of $N$ .
ATAN(N)	Arctangent of $N$ in radians.
COS(N)	Cosine of the angle $N$ given in radians.
COLUMN()	Current column number.
DOLLAR(N)	The text string showing the value $N$ in \$ format.
EXP(N)	$e$ to the power $N$ .
FALSE()	The logical value False
FIXED(N,m)	The text containing $N$ in Fix format with $m$ decimals. $m = 0$ is the same as Int format.
FV	Future Value – a standard financial argument in cash flow problems.

IF(Logical, Then Value, Else Value)

Returns Then Value if Logical is true; Else Value if false.

INDEX(Area, Subscripts)

Returns the value from cell in Area indicated by Subscripts.

INT(N)

The integer portion of  $N$  truncated toward 0.

IRR

Calculates the Internal Rate of Return of a list of cash flows.

ISERROR(Value)

Returns True if (and only if) Value is an error value.

ISNA(Value)

Returns True if (and only if) Value is an #N/A value.

LEN(T)

The length of the text  $T$  in characters.

LN(N)

The base  $e$  logarithm of  $N$ .

LOG10(N)

The base 10 logarithm of  $N$ .

LOOKUP(Value,table)

Searches for Value in the first row or column of table. Returns the contents of a cell from the last row or column of table. Table is a group of cells on the worksheet.

The dimensions of table determine the direction of the search.

Table of Columns

500	X	X	5
1000	X	X	7
1500	X	X	9
2000	X	X	13
2500	X	X	17
3000	X	X	22
3500	X	X	27
4000	X	X	33
4500	X	X	38

value between 1000 and 1499

number returned

MID(T,s,c)

The  $c$  number of characters starting at  $s$  of the text  $T$ .

MIRR

Calculates the Modified Internal Rate of Return of a list of cash flows.

MOD(Divisor, Dividend)

The remainder of the integer division of Dividend/Divisor.

NA()

Returns the #N/A (not available) value.

NOT(Logical)

Returns the opposite of the Logical value.

NPER

Number of Periods – a standard financial argument in cash flow problems.

PI()

The value of pi (3.14159...).

PMT

Periodic Payment – a standard financial argument in cash flow problems.

PV

Present Value – a standard financial argument in cash flow problems.

RATE

Interest Rate per Period – a standard financial argument in cash flow problems.

REPT(T,n)

The text  $T$  repeated  $n$  times.

ROUND(N,m)

$N$  rounded to  $m$  decimal places.

ROW()

The current row number.

SIGN(N)

Returns  $-1$  if  $N < 0$ ,  $0$  if  $N = 0$ , otherwise  $1$ .

SIN(N)

The sine of the angle  $N$  specified in radians.

SQRT(N)

The square root of  $N$ .

TAN(N)

The tangent of the angle  $N$ .

TRUE()

The logical value True.

VALUE(T)

The text  $T$  must contain the representation of a numeric constant. The value of that constant is returned.

Error Values

#N/A	Data not available.
#NAME?	Name not defined.
#NUM!	Overflow or illegal arithmetic.
#DIV/0	Division by 0.
#REF!	Reference to nonexistent cell.
#NULL!	Intersection of disjoint areas.
#VALUE!	Wrong type of value used.

