EasyCalc OnLine Help System

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Contents

Chapter 1

EasyCalc OnLine Help System

1.1 MAIN MENU

```
                Welcome to EasyCalc Version 2.0 (MARCH/APRIL 1995)
Program Copyright (c) 1995 Andrew Woods

Please pick a topic to get some help on:


            Entering data
            - Creating cells

            Pulldown Menus
            - Those menus in full

            Cell Functions
            - Complete list of all cell functions

            Maths Operators
            - Available maths operators

            Icon Bar Functions
            - The icon bar

            AREXX Interface
            - Some Arexx information

            Tooltypes
            - EasyCalc 2.0 Tooltypes

            Tutorial
            - Create your first worksheet

            Drawing Graphs
            - Creating pretty pictures

            Resizing Columns
            - Different column sizes

            EasyCalc User Support
            - Getting more help
```

```
INDEX TO HELP
- Complete index to this guide
```

1.2   PULLDOWN MENUS REFERENCE

```
Project Menu
- File and Printing functions

Edit Menu
- Blocks and Import/Export functions

Options Menu
- Program options

Environment Menu
- Screen mode and palette

Graphs Menu
- Graphing options
```

1.3   PROJECT MENU REFERENCE

```
New Worksheet
- Open new project

Open Worksheet
- Read in saved worksheet

Open View
- Open a new window on a worksheet

Save Worksheet
- Store a worksheet to disk

Print
- Print out a worksheet

About EasyCalc
- Copyright information

Information
- Project information

Quit
- Quit EasyCalc
```

1.4   NEW WORKSHEET OPTION

Opens a new worksheet window. This worksheet is totally independant from
the previous one and allows you to work with more than one worksheet at a
time.

1.5   OPEN WORKSHEET OPTION

Brings up the file requester for you to choose a worksheet to load in. The
worksheet will replace the one you are already working on.

1.6   OPEN VIEW OPTION

Opens a new window on this worksheet so you can view more than one part of
it at the same time.

1.7   SAVE WORKSHEET OPTION

Brings up a file requester for you to choose the filename to save the
worksheet as.

1.8   PRINT OPTION

A requester with four options appears. These are:

Entire Worksheet – Print EVERYTHING.
Current Block   – Print currently marked block.
Last Block   – Print the last block printed.
Screen Area   – Print everything visible in the window.

Printer Help

1) If blank lines start appearing in your printout then change the right
margin to a much bigger number in the WB Printer Preferences or change the
Print Size to ELITE or CONDENSED. Also make sure the Preferences are set
to continuous paper, otherwise page feeds will appear.

2) £ not appearing properly could be because you are using the wrong
printer driver. If you are booted from the EasyCalc 2.0 disk, then the
GENERIC driver will be used which will cause £ to appear as #. Simply
switch to the correct printer driver.

3) The size of the printout is dictated by the Print Size option. To
change the print quality you need to use the Preferences tool.

1.9 ABOUT EASYCALC OPTION

Displays some copyright information and tells you the name of the program
in case you have forgotten. Also the version number is displayed (the
V2.0a part), which you should quote in all your correspondance.

1.10 INFORMATION OPTION

Displays the Information requester, which allows you to view (and edit)
several important attributes of your worksheet:

```
Worksheet Name - Obvious this one
Author         - Who created the worksheet
Comments       - Any important comments
Revision       - How many times the worksheet has been saved
Password       - For confidential data
Use Password   - Controls whether the password is required on loading
```

1.11 QUIT OPTION

Asks if you are sure you want to quit, and if you answer YES then EasyCalc
2.0 will go away. If you have any unsaved work, EasyCalc 2.0 will tell you
about this before quitting.

1.12 EDIT MENU REFERENCE

```
          Cut
          - Cut a block out of the worksheet

          Copy
          - Copy a block (leaving the original untouched)

          Paste
          - Paste a stored block into the worksheet

          Delete
          - Delete a range

          Fill
          - Fill a range

          Column
          - Insert/Delete columns

          Row
          - Insert/Delete rows

          Precision
```

```
                        – Set the precision of a range

                        Colour
                        – Set the colours of a range

                        Justify
                        – Justify a range

                        Style
                        – Set the style of a range

                        Lock/Unlock
                        – Lock/Unlock a range

                        Export
                        – Export a range of cells

                        Import
                        – Import some data
```

1.13 CUT OPTION

The currently marked range of cells is cut from the worksheet into a
seperate memory buffer.

1.14 COPY OPTION

The   currently marked range of cells is copied into a memory buffer leaving
the original range unharmed.

1.15 PASTE OPTIONS

Any block stored in memory is pasted back into the worksheet (overwriting
any cells that may already be there).

There are two types of paste:

RELATIVE – Any formulae with cell references are recalculated so that they
remain valid and point to the correct cell after pasting. Any cell
references that are prefixed with a '$' symbol will not be changed.

ABSOLUTE – All cell references are left unchanged.

1.16 DELETE OPTION

Deletes all the cells in the currently marked range of cells.

1.17 FILL OPTION

Brings up the Fill requester. This is used for quickly filling a range with identical, or sequential numerical data. This request contains the following gadgets:

Start Number – controls the initial value for the first cell to be filled.
Operation   – gives you a choice of Add, Subtract, Multiply and Divide.
Operand   – the value that is applied to Start Number using Operation.

Examples

Start Number = 1, Operation = Add, Operand = 1

Fills the range with a simple ascending sequence starting at one, and adding one every cell that is filled.

Start Number = 1, Operation = Multiply, Operand = 2

Fills the range with the powers of two eg. 1, 2, 4, 8, 16, 32, 64 etc

1.18 COLUMN OPTIONS

INSERT – Inserts a column at the current cursor position.
DELETE – Deletes the column at the current cursor position.

All cell references are updated to keep any formulae valid.

1.19 ROW OPTIONS

INSERT – Inserts a row at the current cursor position.
DELETE – Deletes the row at the current cursor position.

All cell references are updated to keep any formulae valid.

1.20 PRECISION OPTION

A requester appears asking you how many decimal places you want to display in the current range. EasyCalc 2.0 supports anything from 2 to 14 places.

1.21 COLOUR OPTIONS

Controls the colour of cells in the marked range. There are two options:

SET TEXT   – The colour of any text in the range.
SET BACKGROUND – The background colour of each cell in the range.

1.22   JUSTIFY OPTIONS

Controls whether cells are justified or not. There are three available
options:

```
LEFT   - Cell contents are aligned with the left side of the cell.
RIGHT  - Cell contents are aligned with the right side of the cell.
CENTRE - Cell contents are centred within the cell.
```

1.23   STYLE OPTIONS

Controls the text style for each cell in the range. There are four
options:

```
BOLD      - Whether text is in bold or not.
ITALIC    - Whether text is in italics or not.
UNDERLINE - Whether text is underlined or not.
PLAIN     - Cancels all of the above.
```

1.24   LOCK/UNLOCK OPTION

This option allows to you lock a range a cells to prevent them from being
edited or overwritten. The lock does NOT protect them from being
overwritten by a block being pasted, or by Arexx changing them.

If you chose this option for a range that is already locked, then they will
be unlocked so you can edit them again.

1.25   EXPORT OPTIONS

This submenu allows you to export data to other programs in one of four
formats:

CELL CONTENTS - The contents of the cells are exported in CSV (comma
seperated values) using quotes and commas as delimeters.

FORMULAS - The formulas in cells are exported in CSV format.

LISTING - A listing (one cell per line) is generated containing enough
information to recreate the worksheet in any other spreadsheet (if all else
fails).

CLIPBOARD - The block is copied to the clipboard in IFF FTXT format for
importing into any other Amiga clipboard-aware software.

1.26 IMPORT OPTIONS

This submenu allows you to import data from other sources. Currently, there are four options available:

PARSING – Text is intelligently read in and split up into components.

An example. "There are 45 donkeys here" would become:
```
.......A.......B.......C..........D.......E
There   area           45 donkeys   here
```

TEXT – Text is read in one line at a time and each line becomes one cell.

LOTUS WKS – Allows partial importing of Lotus WKS files. I've tried my best to figure out the WKS format without much success. At present only cells with text can be read into EasyCalc 2.0, the rest are ignored. In Lotus you could convert all cells into text, import, then convert them back again in EasyCalc 2.0. If anyone out there has the file format, please get in touch so I can finish this one off.

CLIPBOARD – Imports IFF FTXT data from the clipboard. Basically, any data that any other Amiga clipboard–aware program can send.

1.27 OPTIONS MENU REFERENCE

```
        Exact Size Copies
        - Controls how blocks are pasted

        AutoSave
        - Timed reminder to save

        AutoMove
        - Move the cursor after each cell is entered

        Recalc Order
        - The order cells are calculated in

        AutoRecalc
        - When to recalculate the worksheet

        Recalc Now
        - Recalculate right now!

        Iterations
        - How many times to recalculate

        Grid
        - Pretty grid

        Bookmarks
        - Remember/Retrieve position

        Print Size
```

                        – How big to print

                        Cell Notes
                        – Give cells handy help texts

                        Cell Names
                        – Give cells handy mnemonics

                        Macros
                        – View/Execute Arexx scripts

                        Save Options
                        – Store global settings

1.28   EXACT SIZE COPIES OPTION

If this option is checked then when you paste a block, it a copied back to
the worksheet, EXACTLY the same size as it was when it was cut. Even if
you mark one cell, if the block was sixty cells, then all sixty cells will
be filled.   This option makes EasyCalc 2.0 more consistent with other
spreadsheets.

If the option is unchecked, then block is shrunk, or enlarged to fill the
marked area -- regardless of how big the original block was. This is
generally much more useful than having exact size copies. However, this
option allows you to control this behaviour to get the best of both worlds.

1.29   AUTOSAVE OPTION

                If checked then EasyCalc 2.0 will display a message reminding ↩
                 you to save
periodically. The exact time interval (in seconds) is set with the
AUTOSAVETIME
                tooltype
                . By default it is set to eight minutes.

1.30   AUTOMOVE OPTIONS

You have a choice of UP, DOWN, LEFT, RIGHT or NONE. Depending on which
direction is checked, the cursor will automatically move one cell in your
chosen direction when data is entered. Obviously, if NONE is checked, then
EasyCalc 2.0 will not move anything for you.

1.31   RECALC ORDER OPTIONS

When a recalculation of the entire worksheet is done, all the cells are
processed one at a time in a certain order. If you have forward references
or similar you can run into problems unless this is set correctly.

AS ENTERED - The fastest option (and the default) calculates cells in the
order they were entered into the worksheet.

ROWS - Each row is evaluated in turn.

COLUMNS - Each column is evalulated in turn.

1.32 AUTORECALC OPTION

If this option is checked, then the entire worksheet is recalculated after
every cell is entered or changed. On a large complicated worksheet, this
could take some time (especially on slower machines of course) so it is
useful to switch this option off when entering large numbers of cells, then
evaluate them all at the end.

1.33 RECALC NOW OPTION

Completely re-evaluates the entire worksheet, updating all the cell values.

1.34 ITERATIONS OPTION

Controls how many times a worksheet needs to be evaluated during a recalc
operation. Normally, one is enough, but if you use lots of forward
references, then this will have to be increased. The exact number depends
on the individual worksheet.

Obviously, if you set this to a large number, recalc operations will take a
long time.

1.35 GRID OPTION

If this option is checked, then a pretty grid will be drawn over the
worksheet area.

1.36 BOOKMARK OPTIONS

EasyCalc supports five bookmarks. A bookmark is a handy way to remember
the position of the cursor until a later date, then at a later date jump
back to the position at the press of a key.

Set X - Stores the current cursor position in bookmark X.
Goto X - Jumps to the stored bookmark position X.

1.37   PRINT SIZE OPTIONS

This option lets you change how wide each character is when printed. You
have three choices:

```
PICA      - Normal size
ELITE     - A bit smaller
CONDENSED - Smaller still
```

1.38   CELL NOTES OPTIONS

Introduction

Cell notes are handy messages you can attach to any cell on the worksheet.
If you press HELP while the cursor is over a cell which contains a note,
the help text is displayed.

There are three options:

DEFINE - Allows you to enter a cell note for the current cell.
EDIT   - Allows you to edit an existing cell note.
REMOVE - Removes a note attached to a cell.

1.39   CELL NAMES OPTIONS

                    Introduction

EasyCalc allows you to give individual cells a logical name, which can be
referenced by cell formula. Cell names are highly recommended, because
unlike a cell address it doesn't matter if the cell needs to be moved.

There are three options:

DEFINE - Allows you to enter a name for the current cell.
EDIT   - Allows you to edit the name of the current cell.
REMOVE - Removes a cell name.

EasyCalc 2.0 has two cell names built in which are available all the time,
without defining anything. These are:

#ITERATIONS - Returns the number of
              iterations
               being used.
#CUR_ITERATION - Returns the current iteration, (from 1 to x) where x is
the number of iterations set.

Notes

Other built in names may be added in the future, please note that if you
have a cell with one of the names above, your cell will be ignored, and the
built in name will be used.

If you reference a cell name that does not exist then the evaluater will
use 0 as the result (ie. no error message will appear).

1.40 MACROS OPTIONS

Introduction

EasyCalc 2.0 has over 60 Arexx commands available, this submenu allows you
to first view an Arexx script and then execute it.

The two options are:

VIEW – Allows you to select a file and view it's contents. This can be any
text file (although it is designed for Arexx files).   The files is
displayed in a scrolling list, but can't be edited. If part of it is
missing, then you are short of memory.

EXECUTE – Allows you to choose an EasyCalc Arexx file and start it
executing.   When it is finished a requester will appear telling you if the
file was executed successfully.

Much more information on Arexx can be found in EasyRexx.doc

1.41 SAVE OPTIONS

This option stores the following attributes to disk so that they are set
every time EasyCalc 2.0 is invoked:

EXACT SIZE COPIES
AUTOSAVE
AUTOMOVE
RECALC ORDER
AUTORECALC
GRID
PRINT SIZE

The following are stored for each worksheet and can be set independantly:

BOOKMARKS
ITERATIONS

1.42 ENVIRONMENT MENU REFERENCE

              Windows
              – Control window position

              Screen Mode
              – Change screen mode

```
                    Palette
                    - Edit the palette

                    Save Screen/Palette
                    - Save the above for next time
```

1.43   WINDOWS OPTIONS

This submenu contains three options to make dealing with multiple windows
easier:

CASCADE - Each window is postioned underneath each other allowing access to
all the window title bars to bring any window to the front easily.

MINIMISE - Each window is reduced to its smallest size, and then cascaded
as above.

ACTIVATE NEXT - The next window opened is activated. Repeated selecting of
this option will allow you to cycle through all the windows without
touching your mouse.

1.44   SCREEN MODE OPTIONS

This brings up a screen mode requester so you can change what screen mode
and how many colours you want on the EasyCalc 2.0 screen. Upon confirming
the changes, EasyCalc 2.0 will close everything, then reopen everything in
the new screen mode.

Notes:

It is advisable to keep the number of colours as low as possible (certainly
no more than 8) otherwise EasyCalc 2.0 will slow down considerably. Also
SuperHires screen modes will also slow things down a hell of a lot.

1.45   PALETTE OPTIONS

This submenu hides two options:

EDIT - Allows you to change the colour scheme of EasyCalc 2.0 to anything
you want.

RESET - If you mess up the colours, you can use this to copy the WB colour
scheme.

Notes:

Every worksheet saves the current palette settings. When you reload a
worksheet with a different palette, EasyCalc 2.0 will ask you if you want
to change to the new colour scheme.

1.46   SAVE SCREEN/PALETTE OPTION

```
Stores  the current  screen information (size, resolution and depth) and the
current  palette  settings  so  that  when EasyCalc 2.0 is run again in the
future the saved settings will be used instead of the internal defaults.
```

1.47   GRAPHS MENU REFERENCE

```
            Make Graph

            View Graph

            Delete Graph
```

1.48   MAKE GRAPH OPTION

```
Choose  the  menu option "Graphs/Make Graph" and the currently marked block
will be made into a graph.  A graph MUST have atleast two cells marked, any
less and you will get an error message.

Your new graph will appear on screen to allow you to play with the options.
EasyCalc  2.0 graphs are very simple to use provided you understand how the
program generates a graph from your data.

Basically, there are four types of blocks you can mark:

Type 1:

34.....23.....12  This is a block that just contains numbers so no labels
453....67......3  will be generated for your graph.
4.......3....234

Type 2:

Jan...Feb....Mar  This will generate labels for each column of graph data.
453....67......3
4.......3....234

Type 3:

Fred...23.....12  This will generate labels for row of graph data.
Bill...67......3
John....3....234

Type 4:

......Feb....Mar  This will generate labels for rows and columns of graph
Bill...67......3  data. However notice the top left cell is empty (and
John....3....234  unused by the graph).
```

1.49   VIEW GRAPH OPTION

On the icon bar is an icon that hopefully looks a bit like a graph. (If my
artistic ability has failed me then you can find the icon right from the
"DEL" icon).   Also   the "Graphs/View Graph" options has the same affect.
Choose this and you will be given a list of all graphs which you have
created for this worksheet. Click on any of them and a new screen will be
opened for you to play with the graph.

All graphs get saved off with the worksheet.

1.50   DELETE GRAPH OPTION

Choosing this option brings up a list of all the graphs for this worksheet.
Simply choose the one you want to remove, or CANCEL to leave everything
unharmed.

1.51   DRAWING GRAPHS

                    Introduction

EasyCalc 2.0 has the ability to output your worksheets in a variety of
visual formats. Each worksheet you create may have an unlimited number of
graphs attached to it. You can only view one at a time, but you can easily
change which one you want to view.

Also see:

                MAKE GRAPH OPTION

                VIEW GRAPH OPTION

                DELETE GRAPH OPTION
                Graph Menus (on the Graph Screen, not the EasyCalc 2.0 screen)

When a graph is drawn it is on its own screen so its resolution and depth
is totally independant from the EasyCalc 2.0 screen. However the default
is just to clone the EasyCalc 2.0 screen EXACTLY. Also note that EasyCalc
2.0 is frozen until the graph screen is closed again.

The Project Menu

"Save as IFF..."

Brings up a file requester for you to save the current graph as an IFF ILBM
file you can load into any Amiga art package.

"Print Graph"

Displays a requester allowing you to setup your printer then the graph is
printed using your current printer preferences.

"Close"

Shuts the screen, and returns you to EasyCalc 2.0 proper.

The GraphType Menu

Allows you to choose one of ten different graph types to display your data.
Currently the following are supported:

Bar2DVert - Simple, flat vertical bar chart.
Bar2DHori - Simple, flat histogram.
Bar3DVert - A prettier version of Bar2DVert.
BarStacked - A simple, flat stacked bar chart.
Pie2D   - A simple, flat pie chart. *
Pie2DExp   - A simple, flat, exploded pie chart. *
Pie3D   - A prettier version of Pie2D. *
Pie3DExp   - A prettier version of Pie2DExp. *
Line   - A line chart. **
Area   - An area chart. **

* = Pie charts need row and column labels in the marked block.
** = Line and Area charts need atleast two columns of data.

The Options Menu

Patterns

A check mark denotes whether the graph is rendered with dither patterns or
not.

Colours

A check mark denotes whether the graph is rendered in colour or mono.

Grid

This hides a sub menu with two options, X and Y. A check mark on each
option denotes whether a grid is drawn in that direction. For any pie
chart, these are ignored.

Set Title

Allows you to change the default title of this graph into something more
meaningfull.

Edit Palette

Allows you to control the colours used in the graph. Please note these are
not remembered.

Screen Modes

Allows you to control the number of colours and resolution that your graphs
are displayed in.   The pie charts look best in a screen mode with square
pixels. ie. Hires (unlaced) and SuperHires (laced).

1.52   EASYCALC AREXX INTERFACE

Introduction

The EasyCalc 2.0 Arexx interface has been greatly enhanced from the EasyCalc Plus version. There are now over sixty commands available. These are described in a seperated document called EasyRexx.doc.

1.53   USER SUPPORT

Register EasyCalc 2.0 and I will give you a lifetime of techical support. However if you are initially stuck while trying to evaluate this program, then drop me a line at the address in the program.

OR Email me at this address:

awoods@enigmade.demon.co.uk

The registered version of EasyCalc 2.0 has the following additional features (amongst others):

· 68881 version of the program.
· Many more cell functions.
· Row and column locking.
· Many bug fixes.
· Built-in calculator program.
· Icon bar editor.

1.54   SUPPORTED TOOLTYPES

Currently, EasyCalc 2.0 supports the following tooltypes:

CURRENCY – This expects a one or two character currency symbol which will be used to display currency format cells correctly. The default is the sign. Example. To get French francs you would have CURRENCY=Fr.

EURODATE – Expects either TRUE or FALSE. If TRUE (the default) all date format cells are displayed as DD-MM-YY, otherwise MM-DD-YY is used.

SAVEICONS – Expects either TRUE or FALSE. If TRUE then icons are saved with each worksheet, otherwise no icons are saved.

AUTOSAVETIME – Expects a number of seconds between autosave notifcations. The default (480) is equivalent to 8 minutes.

VAT1 – The first VAT rate to use in the NEWVAT function.

VAT2 – The second VAT rate to use in the NEWVAT function.

1.55   CELL FUNCTIONS

The following cell functions are available in EasyCalc:

@ABS
– Absolute value

@ACOS
– Arc-cosine

@ASIN
– Arc-sine

@ATAN
– Arc-tangent

@AVG
– Average of range

@AVERAGE
– Average of range

@CHR
– Convert ASCII value into character

@CINT
– Round value up or down

@COLS
– Return number of columns in a range

@COMPARE
– Compare two strings

@COS
– Cosine

@COSH
– Hyperbolic cosine

@COUNT
– Count the number of cells in a range

@DATE
– Convert a date into numbers

@DEG
– Convert radians to degrees

@DIVIDE
– Protected divide function

@EXP
– Exponent

```
@FALSE
- Always 0

@FIND
- Return position of some text

@FIX
- Truncate a number

@IF
- Conditional function

@INDEX
- Extract value from a range

@INSTR
- Find text in a string

@INT
- Round a number

@ISNUM
- Check for number cells

@ISSTR
- Check for string cells

@LEFT
- Extract characters from left of string

@LENGTH
- Get the length of a string

@LINK
- Get a value from another worksheet

@LOG10
- Base 10 log function

@LOG
- Base e log function

@LOWER
- Make a string lowercase.

@MAX
- Maximum value in a range

@MID
- Extract characters from middle of string

@MIN
- Minimum value in a range

@MOD
- Remainder of a division
```

@NEWVAT
- Improved VAT function

@NOT
- Logic inverter

@NOW
- Current time

@ORD
- ASCII value of character

@PI
- 3.14159... etc

@PROPER
- Make a string look nice

@RAD
- Convert degrees to radians

@RAND
- Random number between 0 and 1

@REPEAT
- Repeat a string x times

@RIGHT
- Extract rightmost characters

@RND
- Random number between 0 and x

@ROWS
- Return number of rows in a range

@SIGN
- Get the sign of a number

@SIN
- Sine

@SINH
- Hyperbolic sine

@SQR
- Square root

@SQRT
- Square root

@STR
- Convert number into a string

@SUM
- Total of a range

```
                        @TAN
                        - Tangent

                        @TANH
                        - Hyperbolic tangent

                        @TIME
                        - Convert time into a value

                        @TODAY
                        - Return todays date

                        @TRUE
                        - Logical 1

                        @UPPER
                        - Make a string UPPERCASE.

                        @VAL
                        - Convert string into a number

                        @VAT
                        - Get 17.5% of value
```

1.56   abs

```
ABS(expression)
```

This function returns the ABSolute value of the expression. ie. The sign
of the number is ignored so that all numbers become positive.

```
Examples:

VAT(-123.4) would give, 123.4.
VAT(10+1) would give, 11.
```

1.57   acos

```
              ACOS(expression)
```

This function returns the arc-cosine of the expression.

Note: Trig functions are all specified in radians. If you need to convert
between degrees and radians, the functions,
```
              RAD
               and
              DEG
               will help.
```

1.58   asin

```
                ASIN(expression)
```

This function returns the arc-sine of the expression.

Note: Trig functions are all specified in radians. If you need to convert
between degrees and radians, the functions,
                RAD
                 and
                DEG
                 will help.

1.59 avg

```
AVG(cell range)
```

This function returns the average of all values given in the cell range.

Examples:

```
AVG(A1:BB56) could give, 1.52084.
AVG(B6:A4) could give, -1.3734.
```

1.60 average

```
AVERAGE(cell range)
```

This function returns the average of all values given in the cell range.

Examples:

```
AVERAGE(A1:BB56) could give, 1.52084.
AVERAGE(B6:A4) could give, -1.3734.
```

1.61 compare

```
COMPARE("string2","string2")
```

Compares the two supplied strings. The comparison is not case sensitive
(ie. A=a etc); If the strings are the same "1" is returned otherwise a "0"
is returned.

Examples:

```
COMPARE("fred","ginger") = 0
COMPARE(d45,"reorder") could give 1
```

1.62   atan

```
             ATN(expression) or ATAN(expression)
```

This function returns the arctangent of the expression.

Note: Trig functions are all specified in radians. If you need to convert
between degrees and radians, the functions,
```
             RAD
              and
             DEG
              will help.
```

Examples:

```
ATN(20) would give, 1.52084.
ATN(-5) would give, -1.3734.
```

1.63   cint

```
CINT(expression)
```

This converts an expression into an integer by rounding the fractional
part.

Examples:

```
CINT(1.5) would give 2.
CINT(-1.5) would give -2.
```

1.64   cos

```
             COS(expression)
```

This function returns the cosine of the expression.

Note: Trig functions are all specified in radians. If you need to convert
between degrees and radians, the functions,
```
             RAD
              and
             DEG
              will help.
```

Examples:

```
COS(0) would give 1.
COS(1) would give 0.5403023.
```

1.65   cosh

```
          COSH(expression)
```

This function returns the hyperbolic cosine of the expression.

Note: Trig functions are all specified in radians. If you need to convert
between degrees and radians, the functions,
          RAD
           and
          DEG
           will help.

1.66   count

COUNT(range)

This function returns the number of used cells in a range.

Examples:

COUNT(A1:A5) could give 3

1.67   date

```
          DATE(YY,MM,DD)
```

Converts the supplied date into a number of days since 1-Jan-1978. This
will appear as a date if the celltype is a
          date
           .

Examples:

DATE(78,1,1) = 0

1.68   deg

DEG(expression)

This function converts an expression in radians into degrees.

Examples:

DEG(1) would give 90.

1.69   exp

```
EXP(expression)
```

This function returns the exponential function of the given expression.

Examples:

```
EXP(1) would give 2.718...
```

1.70 false

```
FALSE
```

Returns the value 0. This is useful for making logical operations more readable.

Examples:

```
FALSE would return 0
```

1.71 true

```
TRUE
```

Returns the value 1. This is useful for making logical operations more readable.

Examples:

```
TRUE would return 0
```

1.72 instr

```
INSTR("string1","string2")
```

This function searches for string2 in string1.   The search is case insensitive. (ie. A=a); If the string is found then a 1 is returned otherwise a 0 is returned.

Examples:

```
INSTR("hello","hell") = 1
INSTR("hello","bye") = 0
```

1.73 leng

```
LENGTH("string")
```

Returns the length of the string.

Examples:

```
LENGTH("hello") = 5
LENGTH(b56) could give 23
```

1.74 ord

```
ORD("string")
```

Returns the ASCII value of the first character in the string.

Examples:

```
ORD("A") = 65
ORD("0") = 48
```

1.75 val

```
VAL("string")
```

Converts the supplied string into a number.

Examples:

```
VAL("45.6") = 45.6
```

1.76 fix

```
                FIX(expression)
```

This returns the truncated expression. See the examples for how it differs
from

```
                INT
                .
```

Examples:

```
FIX(1.5) would give 1.
FIX(-1.5) would give -1.
```

1.77 if

```
IF(expression,true action,false action)
```

This function examines the expression. If the expression is true (in a boolean sense), then the true action is evaluated, else the false action is evaluated.

Notes:

IF must be in a cell on its own. You can not have 10+IF(5<6,1,0) or similar. However you can use other functions inside IF as normal.

Examples:

```
IF(A1<5,1,A1)
```

If the contents of A1 were less than 5 then this would display in the cell, "1", else the contents of A1 would appear.

1.78   int

```
INT(expression)
```

This removes the fractional part of the expression by always rounding down.

Examples:

```
INT(1.5) would give 1.
INT(-1.5) would give -2.
```

1.79   isnum

```
ISNUM(cell ref)
```

Returns 1 if the cell reference is pointing to a cell that contains a value. Otherwise a 0 is returned.

Examples:

```
ISNUM(A5) could give 1.
```

1.80   isstr

```
ISSTR(cell ref)
```

Returns 1 if the cell reference is pointing to a cell that contains a string. Otherwise 0 is returned.

Examples:

```
ISSTR(A5) could give 1.
```

1.81   xlink

```
LINK("worksheet>cell")
```

This function returns the cell value in the specified worksheet. The worksheet must be already in memory (ie. loaded into another window of EasyCalc 2.0). If the worksheet is not loaded, then 0 is returned.

Notice the > symbol, this divides the worksheet name from the cell address.

Examples:

```
LINK("worksheet1>A5") - would return the contents of cell A5 in worksheet1.
LINK("income87>G67") - would return the contents of cell G67 in income87.
```

1.82   log

```
          LOG(expression)
```

This returns the natural logarithm (base e) of the expression. The expression must be greater than 0.

Note: Trig functions are all specified in radians. If you need to convert between degrees and radians, the functions,
```
          RAD
           and
          DEG
           will help.
```

If you want the base-10 log then use
```
          LOG10
            .
```

Examples:

```
LOG(2) would give 0.30103.
```

1.83   log10

```
          LOG10(expression)
```

This returns the logarithm (base 10) of the expression. The expression must be greater than 0.

Note: Trig functions are all specified in radians. If you need to convert between degrees and radians, the functions,
```
          RAD
           and
          DEG
           will help.
```

1.84   max

```
MAX(range)
```

This returns the maximum value in the specified cell range.

Examples:

```
MAX(A1:A12) could give 56.7.
```

1.85   min

```
MIN(range)
```

This returns the minimum value in the specified cell range.

Examples:

```
MIN(A1:A12) could give 56.7.
```

1.86   mod

```
MOD(x,y)
```

Returns the remainder (the modulus) of x divided by y.

Examples:

```
MOD(10,3) would give 1 (10/3 = 3 remainder 1)
```

1.87   not

```
NOT(expression)
```

Performs a binary invert on the expression. Imagine the expression changed
into binary (1s and 0s). Every 0 is turned into a 1 and vice versa.

Examples:

```
NOT(1) would give 0.
```

1.88   now

```
                NOW
```

This function returns the number of seconds since last midnight (anything
up 86400). If the cell has a type of

```
            time
             then it will appear as a time in
the  HH:MM:SS  format.   This function allows access to the Amigas built in
system clock.
```

Examples:

NOW could give 45743

1.89 pi

PI

Returns the value 3.14159...   (The ratio of a circles diameter to its
circumference)

Examples:

PI would give 3.14159

1.90 rad

RAD(expression)

This function converts an expression in degrees into radians.

Examples:

RAD(90) would give 1.

1.91 rnd

RND(expression)

This function returns a number between 0 and expression. Every time the
worksheet is calculated this value will change.

Examples:

RND(10) could give 5.

1.92 rand

RAND

This function returns a number between 0 and 1 (but never 1). Every time
the worksheet is calculated this value will change. This function is

provided for compatibility with Lotus, AsEasyAs etc.

Examples:

RAND could give 0.4545452.

1.93   sign

SIGN(expression)

This function returns -1 if the expression is negative, 0 if the expression is 0, and +1 if the expression is positive.

Examples:

SIGN(-5) would give -1.
SIGN(2) would give 1.

1.94   sin

SIN(expression)

This function returns the sine of the expression.

Note: Trig functions are all specified in radians. If you need to convert between degrees and radians, the functions,
RAD
 and
DEG
 will help.

Examples:

SIN(1) would give, 0.8414709.

1.95   sinh

SINH(expression)

This function returns the hyperbolic-sine of the expression.

Note: Trig functions are all specified in radians. If you need to convert between degrees and radians, the functions,
RAD
 and
DEG
 will help.

1.96   sqr

```
SQR(expression) or SQRT(expression)
```

This function returns the square root of the expression. The expression
must not be negative.

Examples:

```
SQR(49) would give, 7.
```

1.97   sqrt

```
SQR(expression) or SQRT(expression)
```

This function returns the square root of the expression. The expression
must not be negative.

Examples:

```
SQRT(49) would give, 7.
```

1.98   sum

```
SUM(range)
```

Returns the total of all cells in the specified range added together.

Examples:

```
SUM(A1:B12) - Returns the total of all the cells in the range, A1->B12.
```

```
VAT(SUM(A1:B12))  -  Returns  17.5%  of  the  total of all the cells in the
range, A1-B12.  (follow that?)
```

1.99   tan

```
            TAN(expression)
```

This function returns the tangent of the expression.

Note: Trig functions are all specified in radians. If you need to convert
between degrees and radians, the functions,
            RAD
             and
            DEG
             will help.

Examples:

```
TAN(0) would give 0.
TAN(1) would give 1.5574077.
```

1.100   tanh

```
          TANH(expression)
```

This function returns the hyperbolic-tangent of the expression.

Note: Trig functions are all specified in radians. If you need to convert
between degrees and radians, the functions,
```
          RAD
           and
          DEG
           will help.
```

1.101   time

```
          TIME(HH,MM,SS)
```

Returns   the   number   of   seconds   since   midnight for displaying in a
```
          time
          format cell.
```

Examples:

```
TIME(23,59,59)=86400
```

1.102   today

```
          TODAY
```

Returns the number of days since 1-Jan-1978 for displaying in a
```
          date
           format
```
cell. This function allows access to the Amigas built in system clock.

Examples

```
TODAY could give 98345.
```

1.103   vat

```
VAT(expression)
```

This function returns 17.5% (current UK sales tax) of the expression given.

Examples:

```
VAT(100) would give, 17.5.
VAT(10+1) would give, 1.925.
```

1.104 str

```
STR(expression)
```

This function converts the given numeric expression into a string.

Examples:

```
STR(56.7) would give, "56.7"
STR(-2345.789" would give,"-2345.789"
```

1.105 right

```
RIGHT(string, number of chars)
```

Returns a string that contains the specified number of chars (counting from the right side of the string).

Examples:

```
RIGHT("fred",2) would give "ed"
RIGHT("john",1) would give "n"
```

1.106 proper

```
PROPER(string)
```

Makes a string look nicer by converting the first letter of each word into UPPERCASE and making the rest lowercase.

Examples:

```
PROPER("mr fred jones") would become "Mr Fred Jones"
```

1.107 mid

```
MID(string, startpos, length)
```

Returns <length> characters from the middle of the string, starting at the <startpos>.

Examples:

```
MID("freddie",2,3) = "red"
MID("freddie",4,4) = "ddie"
```

1.108 left

```
LEFT(string, length)
```

Returns the specified number of characters from the left side of the
string.

Examples:

```
LEFT("fred",2) = "fr"
LEFT("fred",4) = "fred"
```

1.109 find

```
FIND(string to search, string to search for, startpos)
```

Searches (case sensitively) for the specified string, starting at the
specified character in the string. If the string cannot be found, 0 is
returned, otherwise the position in the string where the text was found is
returned.

Examples:

```
FIND("freddie","red",1) = 2
FIND("freddie","red",4) = 0
```

1.110 index

```
INDEX(range, x offset, y offset)
```

Returns the cell contents stored at range + x + y. If the cell is empty, 0
is return, otherwise a string or a number will be returned.

Examples:

```
INDEX(A1:B5,0,0) would return the contents of A1.
INDEX(A1:B5,1,0) would return the contents of B1.
INDEX(A1:B5,0,1) would return the contents of A2.
```

1.111 repeat

```
REPEAT(string, count)
```

Repeats the specified string, <count> number of times.

Examples:

```
REPEAT("fred",4) = "fredfredfredfred"
```

1.112 newvat

```
                 NEWVAT(amount, vat rate)
```

Applies the specified VAT rate to <amount>. The VAT rate is either a 1 or
a 2 at the moment. By default 1 applies 17.5% to <amount>, and 2 applies
8% to <amount>.   You can change these as VAT rates change using the

```
              tooltypes
               VAT1 and VAT2.
```

Examples:

```
NEWVAT(100,1) = 17.5
NEWVAT(100,2) = 8
```

1.113 lower

```
LOWER(string)
```

Converts all characters in the string into lowercase.

Example:

```
LOWER("FrEd") = "fred"
```

1.114 upper

```
UPPER(string)
```

Converts all characters in the string into uppercase.

Example:

```
UPPER("fred") = "FRED"
```

1.115 chr

```
CHR(value)
```

Returns a string of one character which is represented by the ASCII <value>.

Examples:

```
CHR(65) = "A"
CHR(32) = " "
```

1.116 divide

```
DIVIDE(expression,divider)
```

Divides the given expression with the supplied divider. This is the same as using the / operator, but protection from divide by zero is added. If divider is 0 then DIVIDE will return 0 otherwise the division is performed.

Examples

```
DIVIDE(100,10) = 10
DIVIDE(N2,0)   = 0
```

1.117 cols

```
COLS(range)
```

Returns the number of columns in a specified range.

Example:

```
COLS(A1:C5) = 3
```

1.118 rows

```
ROWS(range)
```

Returns the number of columns in a specified range.

Example:

```
ROWS(A1:C5) = 3
```

1.119 ENTERING DATA

                    The moment you enter an alpha-numeric character, the ↩
                    spreadsheet enters
COMMAND MODE.   That is, all the menus are ghosted and everything you type
appears at the top of the screen.

Keys available in command mode:

Left + Right cursor keys - moves left and right.
Escape   - aborts input and leaves everything unchanged.
Return   - enters the data.
Amiga + X   - clears the input.
Amiga + Q   - undos a string change.
HELP   - see
                ONLINE HELP
                    .

In EasyCalc there are three types of cell:

· Formula
· String Constant
· Numeric Constant

To denote the type of data you are entering, EasyCalc has the following
rules for the first character of the input:

Start string with   Means
'   String (left justified)
^   String (centered)
"   String (right justified)
=   Formula
A..z   String Left justified (' will be added)
0..9   Numeric cell
\   String (repeats second character to width of column)
-                     Negative numeric cell

In a string, the first character is not displayed.

Examples:

'hello - left justified string
\-   - displays a line of '-' (to fill the whole column)
-3   - a numeric cell with -3 is created
Go away - left justified string (a ' is added to the start of string)
=10+2   - formula is displayed

Every cell in EasyCalc has a unique reference which is described by taking
the letter from the column at the top of the screen and the row number from
the left hand side of the screen. Using the system, the very first cell
(in the top left corner) is called A1. The next cell across is B1 and so
on.   The cell below B1 is called B2 etc. In a formula you could have
something like =10+B6. This would get the value in cell B6 and add 10 to
it.   Then the result would be displayed in this cell. This ability allows
you to have a global VAT rate (for example) and have all cells use the same
VAT rate.   If the VAT rate changes, then it would be easy to change this
one cell and all the other cells would change to reflect the new rate.

In addition to cell references, there is something else called a cell range. Some functions (like SUM) take a range of cells and display an answer. A cell range is a rectangle of cells, everything in the rectangle becomes part of the range. Normally you describe a range by the cells that make up the top left corner and bottom right corner of the range. In a formula a cell range that was to include A5 to G8 would be written A5:G8. Simple really?

A new feature in EasyCalc 2.0 is the ability to reference a cell address with a symbolic name. For example you could give cell A6 the name "TOTAL", and then use the formula =10+#TOTAL instead of =10+A6. Notice the use of the # symbol, this is used to denote when a cell name is being used.

See

               CELL NAMES
                for more information

Also in EasyCalc 2.0, if you press either the UP or DOWN arrow keys instead of RETURN, you will automatically enter the data into the current cell, and the cursor will move in the specified direction -- saving a whole keystroke!

1.120 ONLINE HELP

When the HELP key is pressed this help window will pop up. However what help you get depends on what you were doing at the time, and where you where doing it:

Entering Data

Cursor over a @ symbol in a function - The relevent help of that function is displayed.

Cursor over anything else - The general entering data help message.

Not entering data - The main menu of the help system is displayed.

1.121 GENERAL FORMAT

A number is displayed with as many decimal places as is needed. This can be very messy as decimal points will not be vertically aligned.

eg.

123.456
    4.4
  -2.12

1.122 FIXED FORMAT

This uses the precision value to set the number of decimal places displayed. Even if a number has less than specified it will be padded out with zeros. The effect is similar to below:

```
123.456
  4.400
 -2.120
```

1.123 DATE FORMAT

The number in the cell is taken to represent the number of days since 1-Jan-1978. The cell is displayed in a DD-MM-YY or MM-DD-YY format.

1.124 TIME FORMAT

The number in the cell is taken to represent the number of seconds since midnight (00:00). The cell is displayed as HH:MM:SS.

1.125 CURRENCY FORMAT

The number is displayed as a whole number followed by two decimal places. A currency symbol is placed at the beginning of the number. This leads to an effect like the following:

```
£123.45  (assuming the currency was set to £)
 £67.23
  £0.45
```

1.126 PERCENT FORMAT

A percent symbol (%) is added to the end of the number.

```
eg.
145.6%
```

1.127 TEXT FORMAT

The cell formula is displayed instead of the result.

1.128 HIDE FORMAT

The contents of the cell are not displayed. The cell is maintained but becomes invisible.

1.129   COMMAS FORMAT

Every group of three zeros is padded out with a comma.

eg.

1,000,456,003.456

1.130   SCIENTIFIC FORMAT

The cell contents are displayed in scientific notation and also using the
precision value to limit the number of decimal places.

1.131   HEX FORMAT

The cell contents are converted into hex (base 16) notation.

1.132   OCTAL FORMAT

The cell contents are converted into octal (base 8) notation.

1.133   ICON BAR FUNCTIONS

```
          Going from the left to the right:


           Load Worksheet
           - Retrieve worksheet from disk

           Save Worksheet
           - Store worksheet to disk

           Print Worksheet
           - Print worksheet

           B, I, U, P Style
           - Change the text style

           L, C, R Justify
           - Justify range

           Function List
           - Function paster

           Cut
           - Cut block
```

```
                    Copy
                    – Copy block

                    Paste
                    – Paste block

                    Delete
                    – Delete block

                    Graphs
                    – View graphs

                    Colour
                    – Change colour of block

                    Precision
                    – Change precision of block

                    Lock/Unlock
                    – Lock/Unlock a block

                    Format
                    – Change the cell format
```

1.134 FUNCTION LIST

```
             This  option  brings  up  a  list  of  all  the cell functions  ←
                  available in
EasyCalc  2.0.   When  you  choose one, it is automatically pasted into the
input area at the top of the window.

See
             FUNCTIONS
              for a complete list of them all.
```

1.135 CELL FORMATS

```
             This  option  brings up a requester allowing to format all the  ←
                  marked cells
with the specified format. Currently there are:


             General
             – Unaltered display

             Fixed
             – Rounded value

             Date
             – DD–MM–YY or MM–DD–YY format

             Time
```

```
                        - HH:MM:SS format

                        Currency
                        - £XXXX.xxx

                        Commas
                        - XXX,XXX,XXX

                        Percent
                        - XXX.xx%

                        Text
                        - Cell formulas not results

                        Hide
                        - Invisble cells

                        Scientific
                        - Scientific notation

                        Hex
                        - Base 16 numbers

                        Octal
                        - Base 8 numbers
```

1.136 OPERATORS

An operator is something that performs an action on an expression.
Basically that means +,-,*,/ etc. Below is a list of available operators,
and a description of the priority system:

```
(,)
^,>,<,>=,<=,<>,=
*,/
+,-
```

They have been listed in order of priority (also called precedance). If O
Level maths theory has long since escaped you then let me explain. For
example if you had 10+2*3, the laws of precedance would give an answer of
16 (2*3 then +10), this is because multiplication has a higher precedence
then +.   The highest precedance of all goes to brackets. Using brackets
you can force the order something is calculated in. The previous example
would be (10+2)*3 to give 36. By knowing about precedance you can order
calculations to minimise brackets and speed up the calculation.

Some of the above operators may look unfamiliar to you. Here is a
description of each:

(,) - See precedance above.
^ - Raise to the power of. eg. 2^2 would be "2 raised to power of two" or
would be written as 2^2.

The next few are called comparisons, they are normally used in the IF
command to compare numbers however you may need them for logical functions

sometimes. Basically they show if something is "true":

> - Greater than. Equals 1 if the value on the left of the > is greater
than the value on the right. Otherwise it returns 0.
< - Less than. The opposite of above.
>= - Greater than or equal to.
<= - Less than or equal to.
<> - Not equal to.
= - Equal to.

*,/,-,+ - Do I need to explain these?

Examples:

=10>5 would give 1. (10 IS greater than 5)
=5<>5 would give 0. (5 DOES equal 5)
=5<=5 would give 1. (5 IS less than or equal to 5)

Note the equal sign at the start of the examples. This tells EasyCalc that
what follows is a formula and not a string or something.

1.137 UNMATCHED BRACKETS

This error can have two meanings:

· Left and right brackets do not match. eg. 10+((2*3) would give this
error. You should ALWAYS have a matching right bracket for every left
bracket used.

· Or too many right brackets were encountered before the matching left
brackets. eg. 2+(5*2))(would give this error.

It should be noted that the above examples are artificially simple, often
these errors occur in complex expressions.

1.138 DIVISION BY ZERO

Since a division by 0 is impossible if you have an expression that trys to
divide by zero then it will fail. This error is not always trapped, so if
you suddenly get strange numbers in some cells then check for 0.

1.139 INVALID PARAMETER

                You have given a negative value to a function that cannot cope ←
                  with one.
Functions like SQR() can only have positive (none zero) numbers. This is
because the square root of a negative number is mathematically impossible
when using real (not complex) numbers.

Functions affected:

.

```
            SQR
            .
            SQRT
            .
            LOG
            .
            LOG10
```

1.140 INVALID NUMBER ENTERED

You have entered an invalid number. Invalid means that the number contains
a character that is not part of a number and the EasyCalc evaluator cannot
cope with it.

Alternatively, you have entered a formula, but forgotten to start the
formula with a '=' sign. An example is 2+4. EasyCalc sees that the cell
starts with a number so it trys to process the cell as a number, but then
it comes across the +. Just add a '=' to the start of the formula and all
should be alright.

1.141 RANGE EXPECTED

A function was expecting a range as a parameter, but did not find one.

1.142 STRING EXPECTED

A function was expecting a string (eg. "Bill" or "Cat"), but did not find
one.

Functions like LENGTH only make sense if given a string.

1.143 NUMBER EXPECTED

A function was expecting a number as a parameter, but did not find one.

1.144 ADDRESS EXPECTED

A functions was expecting an address (such as A5 or Z7 etc) but did not
find one.

1.145   INVALID RANGE

A spreadsheet range (eg. A1:Z34) is invalid. This could be because you have exceeded the area of the worksheet or you have made a typing mistake (eg. AAZ) and caused the evaluator to be confused.

The maximum range possible in EasyCalc 2.0 is A1:IV8192. This is 256 columns by 8192 rows.

1.146   UNEXPECTED CHARACTER

During the course of evaluating a formula, EasyCalc has discovered a character it wasn't expecting. This has probably been caused by mistyping something.

1.147   TUTORIAL

Introduction

This simple tutorial is not an exhaustive lesson in spreadsheets, just a simple way for you to get a worksheet up and running quickly. You may find it helpful to print out this page right now.

Done that? Okay, here is some background information all about spreadsheets.

Think of a spreadsheet as a piece of blank paper -- the page from an accounting ledger for example. On this "paper" you can write numbers and titles for sections of the accounts. On paper you have to add up columns manually, with a spreadsheet you can write a formula, the word SUM for example, makes the spreadsheet add up a range of numbers (called cells). The power of spreadsheets lies in the fact that once a formula has been written, even if you change the column of numbers, the formula will automatically add them up again. A program like EasyCalc has many different formulae, so it is capable of of much more than just adding columns.

Let's create a worksheet!

Firstly, make sure you have EasyCalc 2.0 up and running and you are looking at a blank worksheet. If not then quit the program, and then reload it.

Now follow the next few steps exactly, don't worry I'll explain everything as we go:

1) Move the cursor down to cell B2 (that's down one, and across one from the top left hand cell. Now type 56 and press RETURN. The number 56 should appear in that cell.

2) Now move down one cell (to B3) and enter 23 (followed by RETURN of course). Now enter 78 in cell B4, then 67 in cell B5.

3) You should now have four cells (B2:B5) containing the numbers, 56, 23, 78, 67 respectively. If not start again.

4) Now lets get EasyCalc 2.0 to add up these numbers for us. Move to cell B7 and type in the following EXACTLY:

=@sum(b2:b5) (then press RETURN)

Quick as a flash, EasyCalc 2.0 puts 224 in the cell. If you don't trust the program, then check it yourself. Now lets break down exactly what EasyCalc 2.0 did:

EasyCalc 2.0 saw the '=' sign and attempted to evaluate the rest of the line. Then EasyCalc 2.0 came across the @, which meant a function was next. The SUM function was recognised, and EasyCalc 2.0 knew that it must add up all the cells in the range that followed. Upon finding no other functions, EasyCalc 2.0 displayed the result in the cell.

Lets have a closer look:

```
= @ sum( b2:b5 )
\  \  \     \
 \  \  \     \----- This is the range for SUM to work on.
  \  \  \
   \  \  \-------- This is a FUNCTION called SUM which adds up any range
    \  \              of cells you give it (such as b2:b5).
     \  \
      \  \-------- This tells EasyCalc 2.0 to expect a FUNCTION, in our case
       \              SUM, but EasyCalc 2.0 has another 61 functions available.
        \
         \-------- Tells EasyCalc 2.0 that you want the rest of this line
                      evaluated (as opposed to just sticking the text into the
                      cell.
```

So to summarise: All formulae starts with an '=' sign.
                 All functions are prefixed with an '@' symbol.

Now go to cell B9 and enter the following exactly:

=@IF(b7 < 300, "I'm Skint!", "Loads of money")

When you press RETURN, the answer, "I'm Skint" should appear in the cell. IF is another EasyCalc 2.0 function, but it is very special because it can make decisions. In this case, IF is used to decide if cell B7 contains a value less than 300, if it does then it returns "I'm Skint", otherwise "Loads of money" should appear.

To test this second condition, try changing cell B2 to 150. Instantly, B9 should now read, "Loads of money".

Things to do:

1) In cell B7, change the SUM (nothing else) to MIN so it would now read:

=@min(b2:b5)

then try:

```
=@max(b2:b5)
=@avg(b2:b5)
```

What happens in each case?

2) Try changing the 300 in B9 to other values just to prove to yourself that it is not cheating.

The complete tutorial file, TUTORIAL.calc is available on disk.

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1.149   STRING ERROR

A string was not properly delimited. Each string should start and end with
a '"' symbol, eg.   "fred", "bill" etc. If you miss out a '"' then this
error will occur. Simply fic the string and all will be well.

1.150   RESIZING COLUMNS REFERENCE

```
Simply move the mouse to the gap between two column labels and hold the left
mouse  button down.  You should find you are able to move the mouse left and
right and the column width changes as you do it.

Example:

------- ------
  A   | |    B
------- ------
      \
       \Click the mouse between here and hold
```