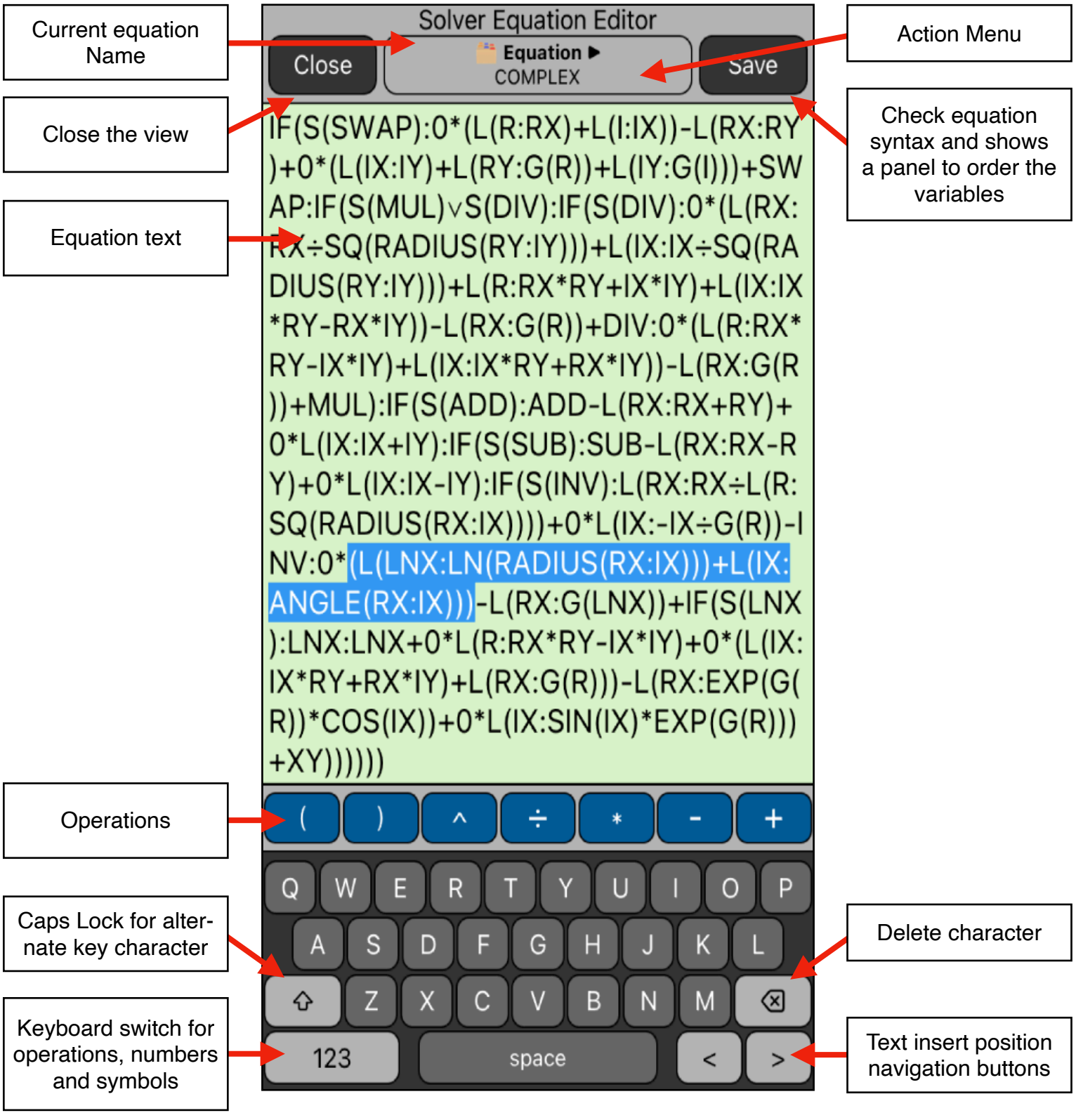
Solver Equation Editor

The Solver Equations Editor allows you to create or edit the text expression of a formula or equation. To show it, tap the **[Solver]** button in the Main Menu and tap the **[New]** or **[Edit]** button. Alternatively, from the **[Utilities]** button in the main menu select the “Solver Equation” item from the “> Editors” submenu.



Once an equation text is entered, you can name the equation , check the syntax and define the order of the variables in the equation calculation worksheet. Finally, a successful equation is saved in a file with the name you entered.

[Equation: ▶]	Shows the actions menu.
New	Clears the editor to enter a new equation.
Name…	Shows an input form to enter an equation name.
> Load	Shows a list to load a previously saved equation.
Delete	Delete the current equation from memory.
Copy Equation	Copy the equation as text.
Paste Equation	Paste a previously copied equation text.
[Cancel]	Close the Editor.
[Save]	Check equation syntax and opens a view to sort the equation's variables.
[⇧]	Toggles the keyboard to alternate characters.
[⌫]	Deletes the current selected character.
[123] **[ABC]**	Toggle the keyboard from letters to symbols and operations.
[<] **[<<]**	Moves the cursor to the left character. Extend character selection to the left.
[>] **[>>]**	Moves the cursor to the right character. Extend character selection to the right.

Example: Return on Equity

Enter the Following equation, order the variables and save it with the name "Help-ROE":

ROE = (ASSET x %EARN - DEBT x %INT - TAX) ÷ EQTY

Solution:

Keystrokes	Description
[Name: ▶] New	Long touch in the top bar button to display the actions menu and select the “New” option to clear the equation text and name.
[Name: ▶] Name…	Long touch in the top bar button to display the actions menu and select the “Name…” option.
Type “Help-ROE” [Done]	In the name input view, type “Help-ROE” as the equation name.
In the keyboard type: **R O E** [123] **[=] [( ]** [ABC] **A S S E T [*]** [123] **%** [ABC] **E A R N [-]** **D E B T [*]** [123] **%** [ABC] **I N T [-] T A X [ )] [÷] E Q T Y**	
[Save]	Touch the “Save” button to check the expression. If the expression has no errors a view to name the equation will be presented.
Type “Help-ROE” and [Done]	Name the equation “Help-ROE”
ASSET %EARN DEBT %INT TAX EQTY ROE	Sort the variables as shown by dragging it to the desire position.
[Save]	Save the equation and close the editor.

Once finished, you have the Equation ready to be used in the **Solver Worksheet** tool to calculate the value of any variable knowing all of the others.

Solver Build-In Functions

ABS(x) : Absolute value of “x”.
ACOS(x) : Arc-cosine of “x” in the current angle mode.
ACOSH(x) : Hyperbolic Arc-cosine of “x”.
ALOG(x) : Common (base 10) antilogarithm; 10^x.
ALOG2(x) : Base 2 antilogarithm; 2^x.
ANGLE(x:y) : Angular polar coordinate for an (x.y) rectangular coordinate calculated in the current angle mode.
ASIN(x) : Arc-sine of “x” in the current angle mode.
ASINH(x) : Hyperbolic Arc-sine of “x”
ATAN(x) : Arc-tangent of “x” in the current angle mode.
ATANH(x) : Hyperbolic Arc-tangent of “x”.
CDATE : Current Date in the current date format.
COMB(x:y) : Number of combination of “x” items taken “y” at a time.
COS(x) : Cosine of “x” in the current angle mode.
COSH(x) : Hyperbolic Cosine of “x”.
CTIME : Current Time in HH.MMSSdd, 24-hour format.
DATE(d1:n) : The date “n” days after or before the date d1.
DDAYS(d1:d2:cal) : Number of days from date “d1” to “d2” using calendar “cal”. If (cal = 2), uses 365 days/year calendar; if (cal = 3), uses 360-days/year calendar; otherwise uses the actual calendar.
DEG(x) : Convert “x” radians to decimal degrees.
EXP(x) : Natural antilogarithm; e^x.
EXPM1(x) : Calculates $e^x - 1$.
FACT(n) : Factorial of a positive integer “n”.
FLOW(name:idx) : Returns the value at index “idx” from the Value-Frequency list “name”.
FP(x) : Fractional part of “x”.

FV(N:I%YR:PV:PMT:P/YR:m) : TVM function for future value.
(m ≠ 0 => BEG mode).

G(x) : Returns (Get) the value of a variable. The variable is local, not appears in the variables list, if it is only used in the L() and G() functions.

HMS(time) : Converts “time” from decimal hours to HH:MMSSdd format.

HRS(time) : Converts “time” from HH.MMSSdd to decimal hours.

IDIV(x:y) : Integer part of the quotient of x ÷ y.

IF(cond:expr$_1$: expr$_2$) : Conditional expression. If (cond is true) uses the “expr$_1$”; otherwise uses “expr$_2$”.

INT(x) : Greatest integer less than or equal to “x”

INV(x) : Inverse of “x”; 1 / x.

INORM(x) : Inverse Normal standard cumulative distribution.

ISTUD(x:n) : Inverse t-Student cumulative distribution of ’n’ degrees of freedom.

IP(x) : Integer part of “x”.

ITEM(name:idx) : Returns the value of the item at index “idx” from X,Y list “name”.

I%YR(N:PV:PMT:FV:P/YR:m) : TVM function for interest rate per year.
(m ≠ 0 => BEG mode).

L(x:expr) : Store the value of “expr” in the variable “x”. The variable is local, not appears in the variables list, if it is only used in the L() and G() functions.

LN(x) : Natural (base-e) logarithm of “x”.

LNP1(x) : Natural logarithm of (1+x).

LOG2(x) : Base 2 logarithm of “x”.

LOG(x) : Common (base-10) logarithm of “x”.

MAX(x:y) : Compares “x” and “y”, and returns the bigger.

MIN(x:y) : Compares “x” and “y”, and returns the smaller.

MOD(x:y) : Remainder of the division x / y.

N(I%/YR:PV:PMT:FV:P/YR:m) : TVM function for number of periods.
(m ≠ 0 => BEG mode).

NORM(x) : Normal standard lower-tail probability of ‘x’.

NOT(logical) : Logical operation NOT
PERM(x:y) : Number of permutations of “x” items taken “y” at a time.
PMT(N:I%/YR:PV:FV:P/YR:m) : TVM function for periodic payment. (m ≠ 0 => BEG mode).
PV(N:I%/YR:PMT:FV:P/YR:m) : TVM function for present value. (m ≠ 0 => BEG mode).
RAD(x) : Convert “x” decimal degrees to radians.
RADIUS(x:y) : Magnitude polar coordinate ”r” for an (x.y) rectangular coordinate.
RAN#: Pseudo-Random number ($0 \leq r < 1$).
RND(x:y) : Round “x” to “y” decimal places.
S(variable name) : Returns ”TRUE” if the current variable solved is ““variable name”.
SGN(x) : Sign of “x”; returns +1 if $x > 0$, 0 if $x = 0$ or -1 if $x < 0$.
SIN(x) : Sine of “x” in the current angle mode.
SINH(x) : Hyperbolic Sine of “x”.
SIZEC(name) : Returns the value of the last entry index from the list specified by “name”.
SIZES(name) : Returns the number of entries in the list specified by “name”.
SPFV(i%:n) : Future value of a single $1.0 payment; $(1+i\%/100)^n$.
SPPV(i%:n) : Present Value of a single $1.0 payment; $1 / (1+i\%/100)^n$.
SQ(x) : Square of “x”; x^2.
SQRT(x) : Square root of “x”; $\sqrt{x}$
STUD(x:n) : t-Student of ’n’ degrees of freedom lower-tail probability of ‘x’.
#T(name:idx) : Returns the value of the frequency at index “idx” from the list specified by “name”.
TAN(x) : Tangent of “x” in the current angle mode.
TANH(x) : Hyperbolic Tangent of “x”.
TRN(x:y) : Truncates “x” to “y” decimals.
USFV(i%:n) : Future Value of a uniform series of $1.0 payments.
USPV(i%:n) : Present Value of a uniform series of $1.0 payments.

XCOORD(r:ø) : ”x” rectangular coordinate for (r,ø) polar coord. “ø” is taken in the current angular mode.
YCOORD(r:ø) : ”y” rectangular coordinate for (r,ø) polar coord. “ø” is taken in the current angular mode.
∑(ctr:c_1:c_2:s:expr) : Sum values of algebraic expression “expr” for values of the counter “ctr” from c_1 to c_2 with increments “s”.