

# Ti-eq

Version 5.0b

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Works with Ti-89, Titanium, Ti-92, V200

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## **Characteristics of the program:**

Ti-eq is an administrator of equations, who allows the user to be able to create his own equations and soon to evaluate them as much numerically as symbolically.

The user will have two levels of ordering:

- Groups: set of equations, could be said a folder with equations.
- Equations: the equations entered the different groups.

The user also will have the capacity to be able to erase whole equations or groups, as also he can add from a variable anyone, groups new or equations to a group. This last one is an important capacity of the program, which will allow that several users can share their equations, without are compatibility problems.

Ti-eq: 16,1kb.

Imprimir: 990bytes.

Total: 17,1kb.

## **Installation of the program:**

Send "Tieq" file (.89p or .v2p or .9xp) and "Imprimir" file (.89z or .v2z or .9xz).

*Nota: the program requires "imprimir.\*z", pretty print tool.*

## **Fast execution of the program:**

- Unarchive Tieq.\*p variable
- Run Tieq
- Close Tieq
- Archive Tieq.\*p (optional)

*Unarchive: from var-link choose Tieq using F4 and then F1 -> 9: Unarchive Variable.*

## **Run Tieq:**

Two ways:

1. From home put "tieq\tieq()" and touch Enter.
2. From home go to var-link, choose "tieq" carpet, then select Tieq.\*p and touch enter. In Home complete add ")" and touch enter.

## **Create equation:**

Select create:

- Group: enter the group name (only 8 characters).
- Name: enter the equation name (only 18 characters).
- N° of equation: enter the number of equation.

Second window of data entry:

- Equation: equation entry.  
**Note:** you can use Hail or Equation Writer.
- Variables: shall enter the variables that exist in the equation.

This window displays "N°" Sometimes we have entered "N° of equation."

Filed equations, the user may initialize variables can enter numerical values, units, or even any string that choice.

Once initialized the equation, the user can verify their income, if correct, the equation will be saved, else the user must enter again the equation.

## **Functions: (Sin,cos,ln,log,etc.)**

Sometimes the entry of certain equations could produce errors, and most often occur when the equations are certain functions like sin, cos, log, ln, etc.. To avoid this error will appear below some examples:

Equation:  $s+\sin(i)=n$  (Wrong)

Variables: {s,i,n}

The program always tried to find the variables in the equation entered, but as we see here is the "sin" and as our letters are variables that make up the function name, the program will not recognize "sin", but recognize "s\*i\*n", to avoid such problems, there are two solutions:

1- Equation:  $S+\sin(I)=N$  (Correct)

Variables: {S,I,N}

2- Equation:  $s+\text{SIN}(i)=n$  (Correct)

Variables: {s,i,n}

## **Open equation:**

Only choose the group and equation.

## **Modify equation:**

This option will allow us to modify any input equation, allowing us to change its name, the equation itself, the variables that owns and initialization of variables.

*Note: This option is to make minor changes.*

- Name: rename the equation 18 characters max.
- Equation: changes the equation.

- Variables: must be respected quotes (""") next to it. If there are zeros in quotation marks, must not be removed unless they are replaced by a variable. if you want to add more variables, create a new equation.
- Initialization: working in the same way as with variables, but in this case be any change in the initialization of variables.

## **Delete:**

- Remove group: only choose the group.
- Remove equation: only choose the equation. if you got a single equation in a group, to eliminate the equation must remove the group may not be empty groups.

## **Add:**

This option will allow users to share backup and different equations, without compatibility problems. It may add entire groups, as also equations may add to existing groups.

### **Group:**

- Variable: directory where the backup variable we want to add, should enter the folder and variable (eg main \ ecu1).
- Group name: the name of the new group (only 8 characters).

### **Equation:**

- Variable: directory where the backup variable we want to add, should enter the folder and variable (eg main \ ecu1).
- Equation name: the name of the new equation (only 18 characters).

## **Export groups:**

To export groups, either to share or to make a backup of them, we must do the following:

In "tieq" directory:

Tieq - prgm ..... Main program  
Setup - expr ..... Configuration (*dynamic*)  
Group - list ..... List of groups created (*dynamic*)

Then we will see "n" files such as "Mat" as we have groups, which carried the name of the group to which they belong. These are files which contain the equations.

Example, name group: "equ1"

To export the group "equ1," we must go to the directory "tieq" and select the file with the name of the group, in this case must be "equ1 - Mat", should only copy that file to where we want.

If sending the group of equations to the PC, we only go to Ti-connect and select the group to export that is in the folder equation.

## **Real/Complex solutions:**

The program is able to work with real/complex results, the user can select the type of solution. The program reminded the configuration chosen (the configuration will be kept in "setup - list")

## **Save in home:**

The program can save on home solutions obtained with the program. The program reminded the configuration chosen (the configuration will be kept in "setup - list").

## Show Equation:

This option allows the user to choose who you want to see equations:

- **All:** shows the symbolic equations and equations with the corresponding numerical replacement.
- **Symbolic:** only shows the symbolic equations.
- **Numerics:** only shows the symbolic equations corresponding numerical replacement.
- **None:** it doesn't show any equation, only the final result.

The program reminded the configuration chosen (the configuration will be kept in "setup - list").

## Limit the interval solution:

This option is very useful when working with trigonometric functions, in this way could limit possible solutions within the interval  $[0.2 \pi]$ .

The program reminded the configuration chosen (the configuration will be kept in "setup - list").

***Important:*** The use of this option can only be applied to dimensionless variables, those variables have units, they won't be able to use this option.

## Use the Equation Writer or Hail:

This option allows the user to enter their equations with EQW or Hail (programs that significantly facilitate the use of the calculator), this will facilitate the entry of long equations revenue or complicated. The user must go to settings and enable this option.

If the EQW / Hail is not available on the calculator, the program only warn the lack of it and continue with normal income.

The program reminded the configuration chosen (the configuration will be kept in "setup - list").

## **Updates:**

### **Version 2.0b:**

- Added option "Modify".
- Works with Complex/real solutions.

### **Version 3.0b:**

- Improved income of equations, avoiding certain mistakes with parentheses.
- Added the possibility to return to the previous menu by pressing "esc" (except in the delete function).

### **Version 4.0b:**

- Fix "data type" error, which occurred when the user entered an equation in Approx mode.
- Added the possibility to return to the previous menu in the Delete function.
- Added the option of limiting the range of solutions.

### **Version 5.0b:**

- Added the possibility to return to the previous menu in the Add function.
- Added the possibility to return to the previous menu in the Modify function.
- The code was modified such that does not change certain configurations to the user.
- The directory of the program was changed, its directory is now "tieq."
- Added the option of using the Equation Writer / Hail to the entry of equations.

## **Thanks:**

- Izerw: creator of "Rem" function.
- Daz: he translated the program.
- Kevin Curbelo: he translated the manual.