[6.54] Delete variables after using numeric solver

The variables in the numeric solver exist in the current folder after exiting the solver, which can be useful if you run the solver again with the same equation. Since the variables do take up memory and may interfere with further calculations, this tip shows a convenient method to delete them.

The current solver equation is stored in the system variable *eqn*. We can use the RCL feature to recall *eqn* without variable substitution, so we can see the variables. Then, the functions *delvar1()* and *exprvars()* can automatically extract and delete the variables. *exprvars()* returns the *eqn* variables as a list with string elements, and *delvar1()* deletes a list of variables. Assuming that *delvar1()* and *exprvars()* are both stored in the *util*\ folder, enter this:

```
util\delvar1(util\exprvars("
```

Next press [RCL] to display the Recall Variable dialog box. [RCL] is [2nd] [STO] on both calculators. Type [e] [q] [n] [ENTER] [ENTER] to recall the *eqn* system variable, then type ["] [ )] [ )] [ENTER]. The variables are then deleted.

For example, suppose the current equation is a=b+c, then the complete entry line looks like this before the final [ENTER] is pressed:

```
util\delvar1(util\exprvars("a=b+c"))
```

If *eqn* is an expression instead of an equation, then *eqn* has the form *exp* = *expression*, where *exp* is a system variable. This method will delete *exp* along with the other variables, since *exprvars()* includes *exp* in the variable list.

The method can be automated with this program:

```
deleqnv()
Prgm
©Delete vars in eqn
©28decØ1/dburkett@infinet.com
local ö,ü

Try:newFold(ä):else:endTry          © Create new folder if necessary
setFold(ä)→ö                        © Make new folder current & save old folder
string(eqn)→ü                       © Convert eqn to string, without var substitution
setFold(#ö)                         © Restore old folder

util\delvar1(util\exprvars(ü))      © Extract eqn variables & delete them

EndPrgm
```

deleqnv() calls *delvar1()* and *exprvars()*, both of which must be in the *util*\ folder. The bulk of the program recovers *eqn* as a string without variable substitution. For more details on this method, see tip [7.40], *Recall expression without variable value substitution*. *delvar1()* is described in tip [7.39], *Quickly delete locked, archived variables*. *exprvars()* is described in tip [7.42], *Find variable names used in expressions*.

This program will not work if you change folders after using the numeric solver.