The program solves implicit equations with a transparent iterative method, showing all steps. It's ideal for exams!

Syntax:

Iter(*Equation, Variable, Try Value, Tolerance*)

Method:
If you have an implicit equation like

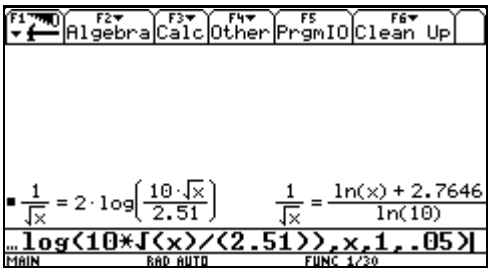
$$f(x) = g(x)$$

1. The programs calculates g(*1° Try Value*) obtaining a numeric expression.
2. The programs calculates |f(*1° Try Value*) - g(*1° Try Value*)|.
3. If |f(*1° Try Value*) - g(*1° Try Value*)| < *Tolerance* the program returns *1° Try Value* like the requested solution.
4. If |f(*1° Try Value*) - g(*1° Try Value*)| > *Tolerance* the program solves this explicit equation:
   $$f(x) = g(1° \text{ Try Value})$$
   obtaining a new value for x: *2° Try Value*.
5. The program shows the first step with a graphic scheme and wait for an ENTER before to restart iteration (you can write the values on your exam text).
6. The programs redo points 1.÷ 5. till to obtain a *n° Try Value* such to have:
   $$|f(n° \text{ Try Value}) - g(n° \text{ Try Value})| < \text{Tolerance}$$

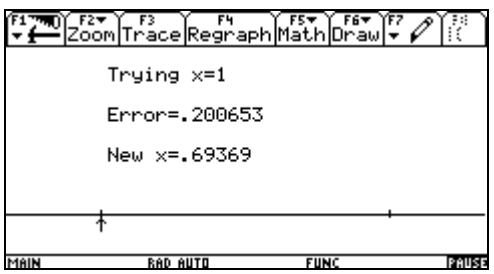
Example:

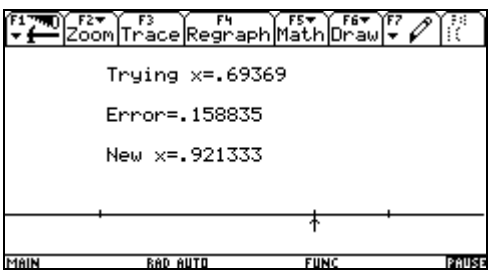
Solve: $\frac{1}{\sqrt{x}} = 2 \cdot \log\left(\frac{10 \cdot \sqrt{x}}{2.51}\right)$ in order to have x with an error between left side and right side of the equation smaller than 0.05; you can take 1 like 1° Try Value.

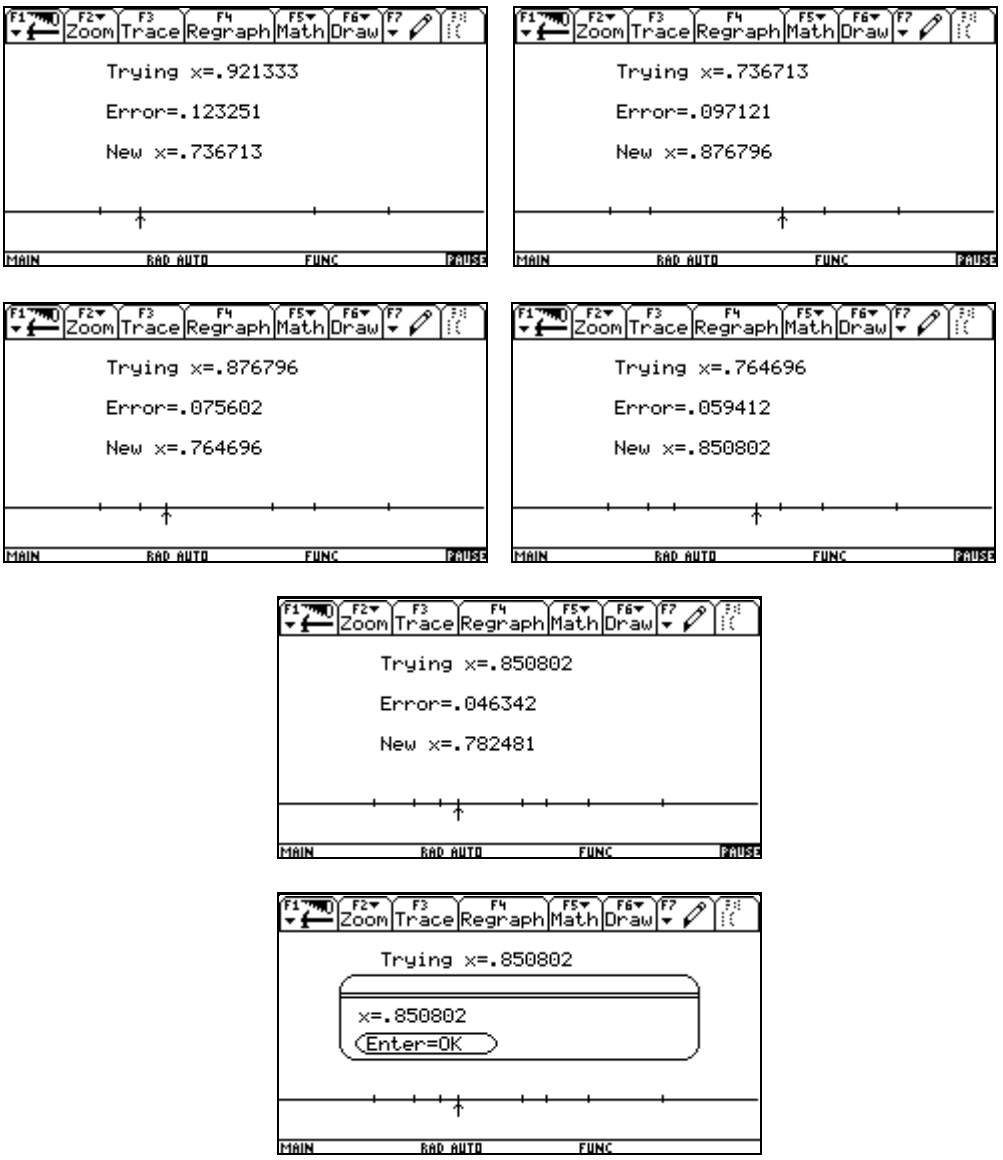
Enter Iter($\frac{1}{\sqrt{x}} = 2 \cdot \log\left(\frac{10 \cdot \sqrt{x}}{2.51}\right)$, x, 1, 0.05)



Enter







This program has been already used many times without problems. If you find any bug first assure you to have selected the English language in the Mode and not to have translated the code with any program. If the problem persists, please, let me know.
For a better and faster answer, please, enclose some screenshot of the bug: entered inputs, expected outputs, error messages, erroneous code line, Mode setting… it will help me very much!
My address is paolosilingarditi@interfree.it; write **TI-Program** as Object of e-mail**!**

IN ORDER TO PREVENT SPAMMING, E-MAIL WITHOUT THE CORRECT OBJECT WILL BE AUTOMATICALLY DELETED!

You can find all my programs at this address:
http://www.ticalc.org/archives/files/authors/44/4458.html.

Remember to vote this program in the site!

Paolo Silingardi