

Solving Equations Using TI-89 SOLVER

Basic procedure:

The basic procedure assumes you have the older operating system *without icons* when you press APPS.

1. Press **APPS**
2. Press **9**: (selects Numeric Solver)
3. Press **CLEAR** (clears any existing equation)
4. Enter the equation to be solved. You can enter the equation exactly as written on the page.
5. Press **ENTER** The equation parser will determine your variable(s). You can enter a guess value or leave the variable space blank. A reasonable guess of the best value will often help solver find a valid root to the equation. If solving chemical problems, the guess should be chemically valid and, if possible, near the solution value. If the SOLVER result is not chemically valid, try a different guess value.
6. Press **F2** to execute the SOLVE

Example:

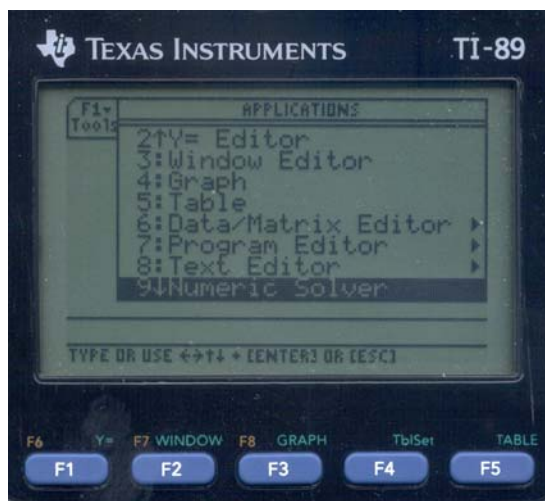
For a particular chemical equilibrium problem, the solution for equilibrium concentrations is

$$1.75 \times 10^{-5} = \frac{x^2}{(0.10 - x)}$$

1. Press **APPS**

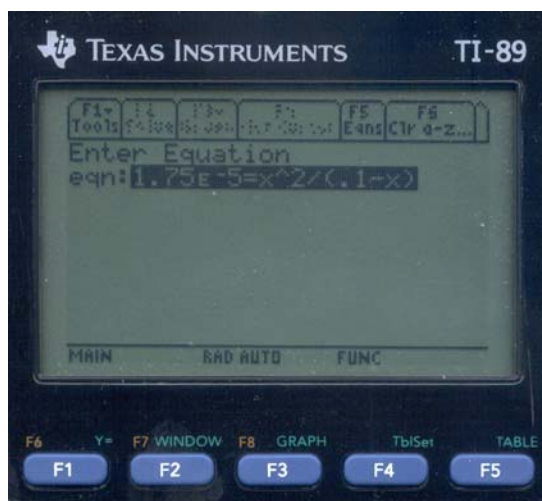


2,3. Press **9**, **CLEAR**

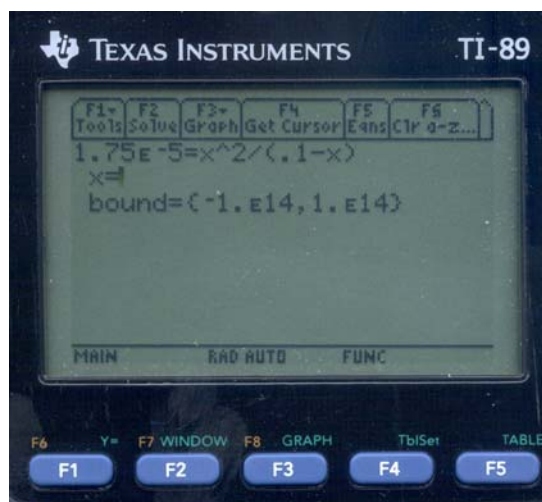


4. Enter the equation

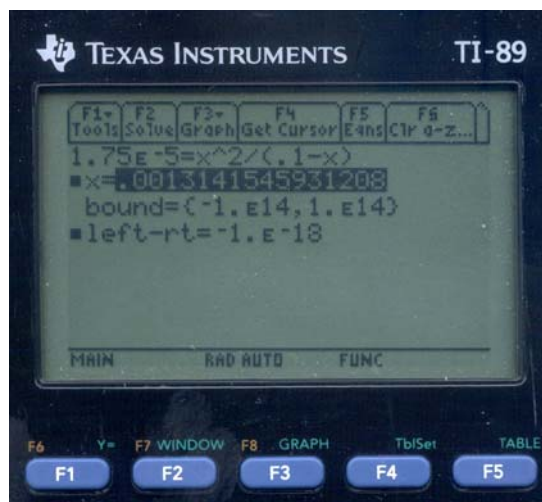
$$1.75 \times 10^{-5} = \frac{x^2}{(0.10 - x)}$$



5. Press **ENTER** Enter a guess or leave the line blank (it's your choice).



6. Press **F2** to execute the SOLVE



The numerical solution is 0.00131.

Demonstrate that if a chemically invalid guess (such as -0.01) is used, SOLVER may return a chemically invalid result (-0.00133). Entering a guess of a negative number or a wildly bad guess may yield a mathematically acceptable result but an erroneous chemical result.