

Finding the zeros of a quadratic equation using the TI-Nspire™ CAS (Tutorial E6)

http://www.atomiclearning.com/k12/en/movie/86425/play_window?type=Tutorial&sid=2421

[00:00:00.00]

You can find the solutions of an equation very quickly using the TI-Nspire CAS software. Keep in mind that the

[00:00:08.00]

example in this tutorial will work properly only if you are using the CAS version, with built-in Computer Algebra

[00:00:15.00]

System capabilities. Among other differences, the CAS version allows simplified equations to keep their mathematical

[00:00:23.00]

structure, and symbols such as pi and variables can be symbolically recognized and simplified. I'll click the

[00:00:32.00]

Insert button and choose Calculator. Next, in the Document Tools, I'll click Algebra, and then select Solve. This

[00:00:44.00]

will return the "solve" function to the entry line with a set of open parentheses. There are two arguments required

[00:00:51.00]

before the software can execute this function. The first is my equation, so I need to enter that first. In this

[00:00:59.00]

case, I want to find the solutions to the equation $2x^2 - 5x + 2 = 0$, so I'll press "2", then "x" followed by the Shift

[00:01:14.00]

key, and then "6". I'll press "2" for the exponent, and then the right arrow to move out of the exponent. Now

[00:01:25.00]

I'll press "-", then "5", and then "x" and then "+2". Now I'll press the "=" key, and then zero. Now that we've entered

[00:01:41.00]

the equation, we need to give the solve function the second argument, which is the variable that it's supposed to solve.

[00:01:48.00]

In this case, my expression only has one variable, x , so I'll press the comma to separate the arguments, and then

[00:01:58.00]

my variable, " x ". To evaluate this function, I'll press the Enter key to return the solutions that will make my

[00:02:06.00]

equation true. Here, I can see that this equation is true when x equals either $1/2$ or 2 . If we had done this with

[00:02:15.00]

the TI-Nspire, we would have used the nSolve command, and it would have returned only one of the two solutions. Remember

[00:02:24.00]

that TI-Nspire CAS software has all the functionality of TI-Nspire technology plus built-in Computer Algebra

[00:02:32.00]

System capabilities.

[00:02:36.00]