

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

[http://www.atomiclearning.com/k12/en/movie/35636/play\\_window?type=Tutorial&sid=1674](http://www.atomiclearning.com/k12/en/movie/35636/play_window?type=Tutorial&sid=1674)

[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 example in this

[00:00:09.00]

tutorial will work properly only if you are using the CAS version, with built-in Computer Algebra System capabilities. Among other

[00:00:17.00]

differences, the CAS version allows simplified equations to keep their mathematical structure, and symbols such as pi and variables

[00:00:24.00]

can be symbolically recognized and simplified. I'll click the Insert button and choose Calculator. Next, click Algebra, and

[00:00:37.00]

then select Solve. This will return the "solve" function to the entry line with a set of empty parentheses. There are two arguments

[00:00:47.00]

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

[00:00:55.00]

want to find the solutions to the equation  $2x^2-5x+2=0$ , so I'll press "2", then "x", followed by the Shift key, and then "6". I'll

[00:01:09.00]

press "2" for the exponent, and then the right arrow key to move out of the exponent. Now I'll press "-", then "5", and then "x"

[00:01:19.00]

and then "+2". Now I'll press the "=" key, and then zero. Now that we've entered the equation, we need to give the solve function

[00:01:31.00]

the second argument, which is the variable that it's supposed to solve. In this case, my expression only has one variable, x,

# TI-Nspire™ Software Script

[00:01:39.00]

so I'll press the “,” to separate the arguments, and then my variable, “x”. To evaluate this function, I'll press the Enter key to return

[00:01:50.00]

the solutions that will make my equation true. Here, I can see that this equation is true when x equals either  $\frac{1}{2}$  or 2. If we

[00:02:01.00]

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

[00:02:10.00]

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

[00:02:20.00]

capabilities.

[00:02:23.00]