

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

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

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

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

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

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

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

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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

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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"

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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

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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

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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

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

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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.

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

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capabilities.

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