

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 handheld. 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 press the Home key and insert the Calculator application. Next, press the

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Menu key, choose Algebra, and then I'll select Solve. This will return the "solve" function to the entry line with a set of empty

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parentheses. There are two arguments required before the handheld can execute this function. The first is my equation, so I need

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to enter that first. In this case, I want to find the solutions to the equation $2x^2 - 5x + 2 = 0$, so I'll press "2", then "x", followed

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

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

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

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“x”. To evaluate this function, I’ll press the Enter key to return the solutions that will make my equation true. Here, I can see

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that this equation is true when x equals either 1/2 or 2. If we had done this with the TI-Nspire, we would have used the nSolve

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command, and it would have returned only one of the two solutions. Remember that the TI-Nspire™ CAS handheld has all the functionality

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of TI-Nspire™ technology plus built-in Computer Algebra System capabilities.

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