

Solving Equations Using Solve and Csolve on the TI-92

To solve an equation you must give the calculator the equation and then tell it which variable to solve for. In the home screen type

solve(equation, variable)

There are several ways to enter the solve command:

- Type **solve**(
- Select it from the **Catalog** menu
- **F2Algebra, 1:solve**(

If your calculator is set in auto mode, when you press **enter**, the answer will appear in “proper form” giving an exact answer. If you press **diamond enter**, the answer will be given as a decimal approximation.

If there are fractions in your equation, be sure to put the numerators and denominators in parentheses if needed.

Example:	Solve	$\frac{x-3}{5} + \frac{x}{8} = \frac{3}{4}$
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F2:Algebra

1:Solve

Key in (x-3)/5+x/8=3/4,x)

Enter Answer is 54/13

Diamond Enter Answer is 4.1538

The solve command will only find real solutions. If you suspect that your equation has complex solutions, use the **csolve** command instead. It will give both real and complex solutions. Use any of the following to access the csolve command:

- Type **csolve**(
- Select csolve from the **Catalog** menu
- **F2:Algebra, A:Complex, 1:csolve**(

Use the same format: **csolve**(equation, variable)

Example:	Solve	$x^2 - 4x + 8 = 0$
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F2: Algebra

A: Complex

1:csolve(

Key in **$x^2 - 4x + 8 = 0, x$**

Enter Answer is $2 + 2i$ or $2 - 2i$

Example: Solve $4x^5 - 8x^4 - x + 2 = 0$

F2: Algebra

A: Complex

1:csolve(

Key in **$4x^5 - 8x^4 - x + 2 = 0, x$**

Enter Answer is $\frac{i\sqrt{2}}{2}, -\frac{i\sqrt{2}}{2}, \frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}, 2$

There are 2 complex solutions and 3 real solutions. Two of the real solutions are irrational and one is rational.

If you are unsure about what type of solutions an equation will have, always use the csolve(command.