

## Finding real solutions for equations with the TI-89 and TI-92

### Method of Intersection:

Starting from the Home screen(command line).

1. Enter function editor.  
Press **◆ Y=**.
  2. Erase or deselect any existing functions.  
If any other functions are entered:  
Either use the **CLEAR** or **←** key to erase them,  
or for each function, press **F4** so that the function won't graph but is still in the calculator.
  3. Enter the right and left hand sides of the equation.  
If no other functions are entered, set Y1 equal to the right hand side of the equation and Y2 equal to the left hand side.  
But if there are already functions entered that you want to keep, move the cursor down until you get a blank function. Type in the right hand side of the equation and press **ENTER**. Then enter the left hand side into the next function. Take note of the functions' numbers.
  4. Return to the graph screen with a standard viewing window if no window information is given. If you are given a window or interval in which to find the solution, skip to step 7.  
Press **F2:Zoom 6:ZoomStd**.
  5. Wait for the graphs to draw.
  6. Make sure at least one intersection is showing.  
If not, zoom out until one is seen.  
Press **F2:ZOOM 3:ZoomOut ENTER**.  
Wait for the graphs to redraw.  
If you still don't see an intersection, press **F2:ZOOM 3:ZoomOut ENTER** again and go back to previous step.
  7. Enter the math menu.  
Press **F5:Math**.
  8. Find the intersection.  
Press **5:Intersection**.  
Verify the function in the top right corner is one of the functions.  
If it is press **ENTER** to select it.  
If not, press either **(cursor up)** or **(cursor down)** until it is one of the functions' numbers.  
Verify the function in the top right corner is the other function.  
If it is press **ENTER** to select it.  
If not, press either **(cursor up)** or **(cursor down)** until it is the other function.  
Move the cursor close to the intersection and press **ENTER**.
  9. Set the bounds of the intersection.  
Move the cursor to the left of one intersection and press **ENTER**.  
Move the cursor to the right of that intersection, make sure only one intersection is in the bounds,  
and press **ENTER**.
  10. Wait for the calculator to find that intersection.  
When done a solution to the equation will appear at the bottom of the screen as the value of x.
  11. If there are other solutions,  
Go back to step 7.
- You may have to zoom out again to find other intersections.

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