

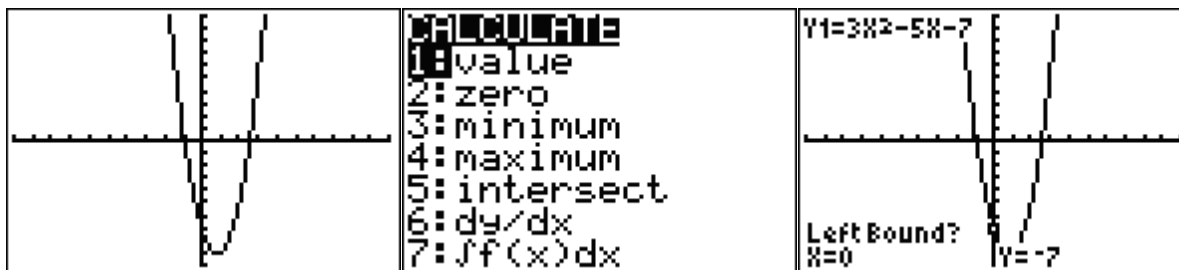
## STUFF I NEED TO DO WITH MY TI-CALCULATOR

Repeat: “I will never use TRACE, I will never use TRACE, ...”

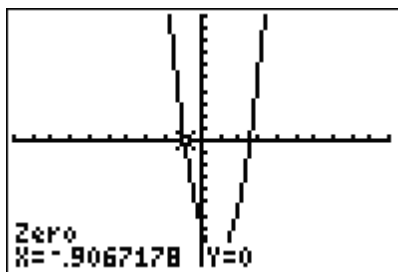
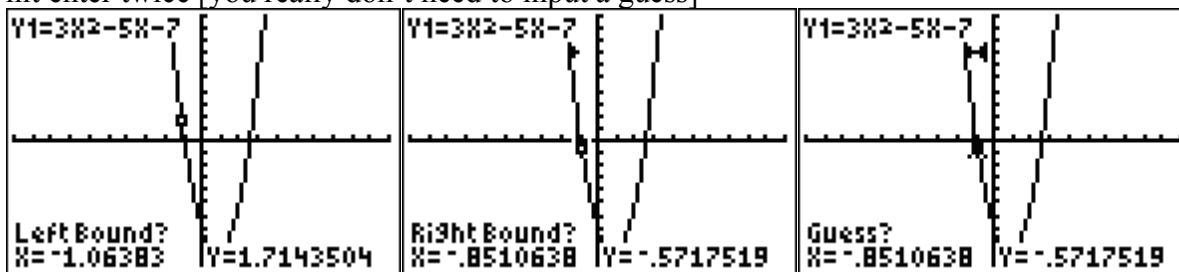
### Finding root(s)/zero(s)

Find the zeros of  $f(x) = 3x^2 - 5x - 7$

Graph on a standard window, then go to 2<sup>nd</sup> CALC, choose option 2,



Move your cursor to the left of the zero [enter], then move it to the right of the zero [enter] , then hit enter twice [you really don't need to input a guess]

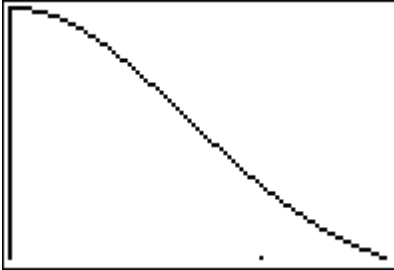


Here is one zero [root], now find the second zero [root]

**ZOOM FIT** is our friend!

When given a domain, you should enter it into the Xmin and Xmax part of the WINDOW option, then use ZOOMFIT and your graph will magically fit on your graphing screen

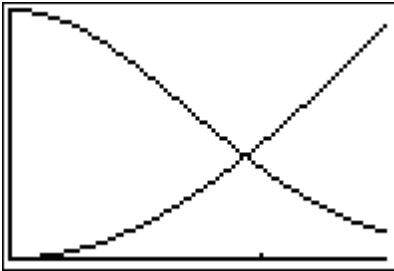
Graph  $f(x) = e^{-x^2}$  on  $[0, 1.5]$  use ZOOMFIT which is option 0 in the ZOOM Menu



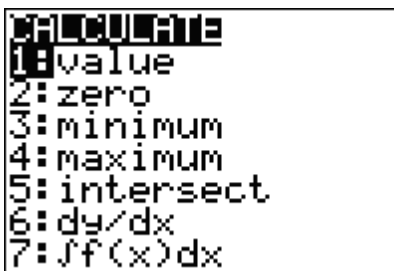
It should look like this

**Find the intersection of two curves - once again, “I will never use TRACE!”**

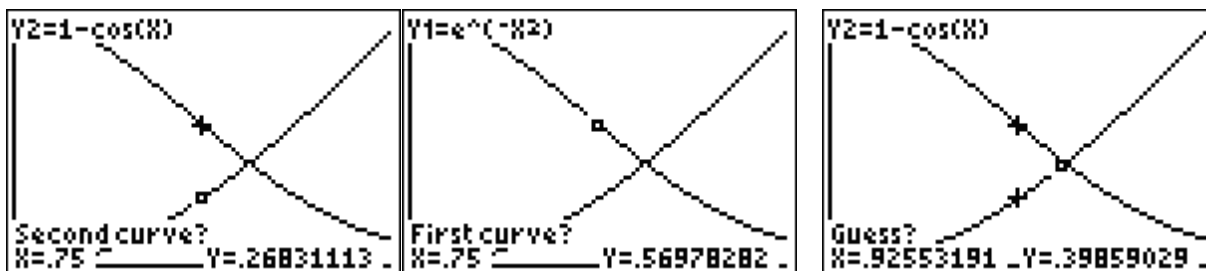
Let  $y_1 = e^{-x^2}$  and let  $y_2 = 1 - \cos x$  on  $[0, 1.5]$ . Once again, enter the domain and use ZOOMFIT. The graph should look like this.



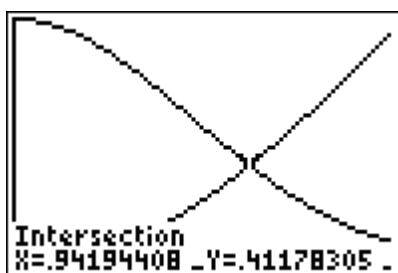
To find the intersection use 2<sup>nd</sup> CALC and choose option 5



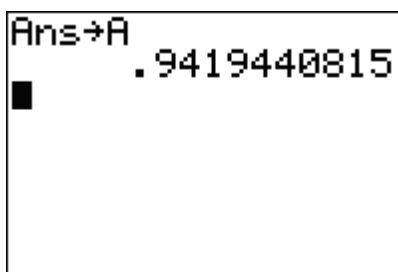
You will get several prompts. You'll need to hit ENTER for the first two prompts, then move your cursor close to the intersection for the GUESS



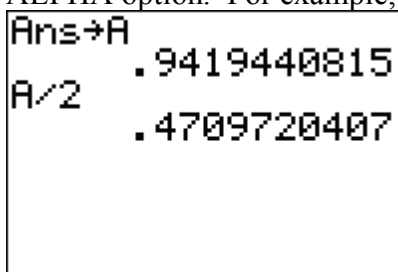
Hit ENTER after the GUESS and you should get the intersection point



You can store the x-value for later use by going to the HOMESCREEN and hitting the STO button. You can choose any letter to store the value. [just remember what letter you picked]



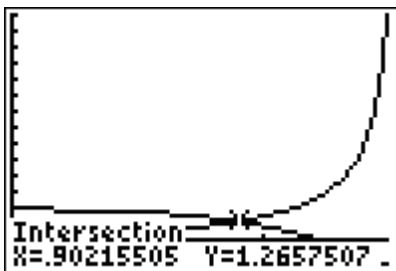
Now if we need to use this value again, then we won't have to try to input it but just use the ALPHA option. For example, if I wanted to divide the value by two, then all I need to do is



Find the intersection of the two curves:

$$y_1 = \tan x \text{ and } y_2 = 2 - x^3 \text{ on the domain } [0, 1.5]$$

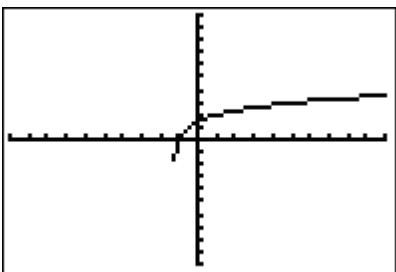
Your final screen should look like



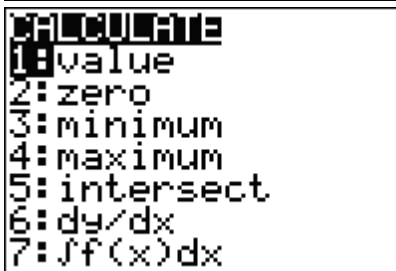
### Some other useful TI tools:

Finding a specific value of a function: let  $f(x) = \ln(3x + 4)$ , find  $f(5)$

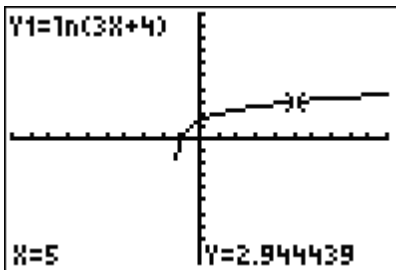
This can be done in several ways. Let  $f(x)$  equal  $y_1$  and choose ZStandard.



One more time – never use TRACE



2<sup>nd</sup> CALC, choose option 1 [value] and let  $x = 5$ , ENTER



You can also find the value of  $f(5)$  on the HOME SCREEN

Choose VARS, then Y-VARS, then FUNCTION  $y_1$

<b>VARX Y-VARS</b> 1: Window... 2: Zoom... 3: GDB... 4: Picture... 5: Statistics... 6: Table... 7: String...	<b>VARX Y-VARS</b> 1: Function... 2: Parametric... 3: Polar... 4: On/Off...	<b>FUNCTION</b> 1: Y1 2: Y2 3: Y3 4: Y4 5: Y5 6: Y6 7: Y7
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To find  $f(5)$  type (5) after the Y1, then hit ENTER

Y1 █	Y1 (5) █	Y1 (5) 2.944438979 █
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Another option is to use the TABLE. Go to TBLSET now and choose the following options

TABLE SETUP	
TblStart=0	
ΔTbl=1	
Indent: Auto	HS
Depend: Auto	Ask

This will allow us to input as many x- values as we want.

Now go to TABLE. Your screen should now look like this.

X	Y1	
█		
X=		

Now enter 5 for an x-value

X	Y1	
5	2.9444	
X=		

Notice that the table constricts the number of decimal places.

**NOTE: Y-VARS is very useful so get used to using it.**

Let  $y_1 = \sin(2x + 4)$  and let  $y_2 = |\sin(2x + 4)|$

Since  $y_2$  is just the absolute value of  $y_1$ , then we can enter the functions as:

```

Plot1 Plot2 Plot3
\Y1=sin(2X+4)
\Y2=abs(Y1)
\Y3=
\Y4=
\Y5=
\Y6=
\Y7=

```

### Entering piecewise functions

Consider the following piecewise function:

$$f(x) = \begin{cases} x^2 - 5, & x < 2 \\ 3x + 1, & x \geq 2 \end{cases}$$

The inequalities are contained in the TEST menu [2<sup>nd</sup> MATH]

