

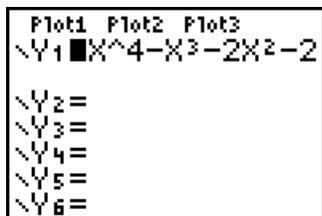
# Finding Real Zeros on the Graphing Calculator

The following screens show how to find the real zeros (x-intercepts) of a function using the TI-83/84 Graphing Calculator.

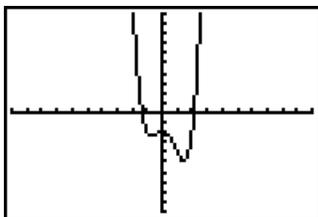
**Example:**  $f(x) = x^4 - x^3 - 2x^2 - 2$       Location of x-intercepts: -1.34, 2.24

## TO FIND THE ZEROS:

I. Plug the equation into Y =

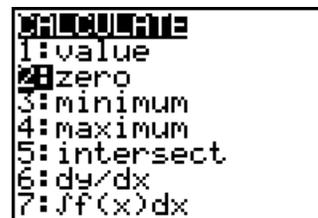


II. GRAPH the function

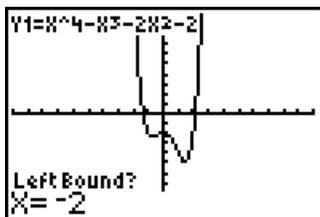


III. Push 2<sup>nd</sup> CALC

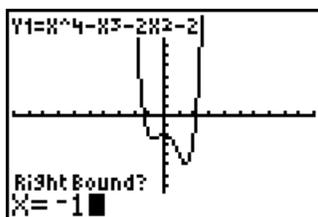
Choose 2: zero



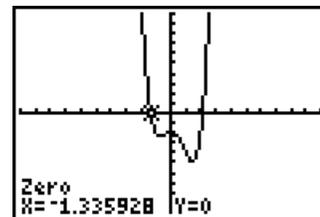
IV. Since there are two zeroes, we need to find one at a time. Let's find the one on the left. It's between  $x = -2$  and  $x = -1$ . Type -2 as the left bound.



V. Type -1 as the right bound and hit ENTER. When you hit ENTER again, the TI-83 gives the coordinate of the zero.

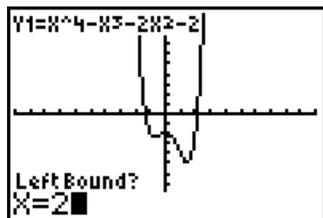


VI. The zero is highlighted by the calculator. It is  $x = -1.34$  rounded off.

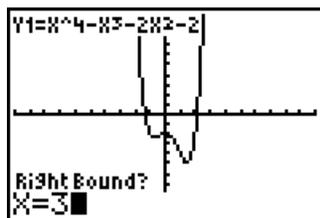


VII. Repeat these same steps to find the other zero of the function. That zero is between  $x = 2$  and  $x = 3$ .

Type 2 as the left bound.



VIII. Type 3 as the right bound. Hit ENTER to find the zero.



IX. The zero is highlighted by the calculator. It is  $x = 2.14$  rounded off.

