Finding Local Maxima and Minima on TI-92

Example:

Graph the function $f(x) = x^3 - 3x^2 + 5$ over the interval (-1, 3) and find the local maxima and local minima.

Clear previously saved functions in the Y= window.

Enter equation for Y1

$y1 = x^3 - 3x^2 + 5$

Set the viewing window for the specified interval (-1, 3)

Diamond Window
xmin = -1
xmax = 3
xscl = 1

To let the calculator determine the best ymin and ymax for the x values you have chosen

F2: Zoom (Scroll down)
A: ZoomFit

To find the local maximum

F5: Math
4: Maximum
Lower Bound ?: Use left and right arrows to **move cursor** to the left of the high point of the graph.
Enter
Upper Bound ?: Use right arrow to **move cursor** to the right of the high point of the graph.
Enter

The cursor moves to the highest point and the coordinates are listed at the bottom of the screen.

The maximum value of 5 occurs when x = 0. (You may get a very small number which rounds to 0 such as E-38)

Repeat the process to find the local minimum

F5: Math
3: Minimum
Lower Bound ?: Use left and right arrows to **move cursor** to the left of the low point of the graph.
Enter
Upper Bound ?: Use right arrow to **move cursor** to the right of the low point of the graph.
Enter

The cursor moves to the lowest point and the coordinates are listed at the bottom of the screen.

The minimum value is 1 when x = 2 .