

Matlab Group Assignment #3

Section #: _____

Names:

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For this assignment, your team will create a program which will ask the user to input a symbolic expression in x , then display the first and second derivatives and graph the (original) expression in an appropriate window and highlight all roots, critical values, and inflection points. Among the issues you will face are the following:

1. Symbolic variables: See Gilat p350-364.
2. Generating user input: See Gilat pp 99-100.
3. Finding only real solutions for $f = 0$, $f' = 0$ and $f'' = 0$.
4. Determining a viewing window large enough to see the entire graph, but small enough to see all relative extrema and inflection points.
5. Plotting the roots, critical values, and inflection points as points on your graph.

You are to execute this program twice. Your TA will observe you running your program in lab **19-20 November** and give you 2 different expressions to plot. You will also publish your work to a PDF file and turn that in for your TA to check. You should plan to test your program one week before it is due to make sure you have no issues with it!

NOTE: To receive full credit, once the expression is entered by the user, ALL other procedures (derivatives, solutions of equations, determination of viewing window for plot, etc.) should be automatically done by the program.