

Homework #11
Engineering 0711 - Fall 2009

Due: Monday, October 19

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Your task: Design, code, and debug a MATLAB script that

- (1) Asks the user what kind of function (string, in-line, or m-file) will be used. If a string or inline, have the user enter the function, if an m-file, enter the file name;
- (2) Request the user to enter the domain of interest, and produce an annotated plot of the function in the desired domain using fplot (use a **function call**);
- (3) Displays a menu asking what type of analysis: zeros, minima, maxima;
- (4) Uses a switch-case structure with the menu response to
 - (a) Locate as many zeros as desired, report location of each zero found in command window, and compile and return a vector with the zero locations (use a **function call**)
 - (b) Locate as many minima as desired, report location and value of each minimum found in command window, and compile and return two vectors with location of minima and values (use a **function call**)
 - (c) Locate as many maxima as desired, report location and value of each maximum found in command window, and compile and return two vectors with location of the maxima and values (use a **function call**)
 - (d) Find the area under the curve between 2 points entered by the user. Give the user the option of using the trapz or quadl method.
- (5) After finding as many of desired option, returns to step 3.
- (6) After working with current function, asks whether analysis of another function is desired, and if so, returns to step 1.

Use the function $y = 3x \cos(2x)e^{0.1x}$ in the domain $[-2\pi \ 2\pi]$

To test your script.

Turn in:

1. Folder with various m-files