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Section: Monday 630 - 8

Assignment: lab 3

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**Problem 3.1**

Given the function f(x) you defined above, determine y = [f(3), f(0.3), f(3.3)]. Next determine z by entering the following commands in the Command Window. What is the difference between y and z?

>> y = [f(3), f(.3), f(3.3)]

y =

-0.0529 -0.0679 -0.0725

>> inputvector = [0 3 3.3];

>> z = f(inputvector);

>> z

z =

-0.1086 -0.0529 -0.0725

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**Problem 3.2**

What are the results of these commands? Why does MATLAB give these results?

>> fscalar(.67)

ans =

-0.0319

>> vectorinput = [1 -2 2];

>> fscalar(vectorinput)

ans =

-0.0116 -0.7178 -0.0051

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**Problem 3.3**

Print out the m-files for the functions to turn in. Also run both functions scalar and vector inputs. Copy your Command Window inputs and resulting outputs in the Word document for submission.

function [value] = h(x)

if x < 12;

value = 0;

else x >= 12;

value = 12.\*x.^2-12;

end

function value = g(x)

value = (-1.25)\*x.\*exp(sin(x)).\*exp(-3\*x)-71.4 ;

end

>> inputvector = [ 572 278 989]

inputvector =

572 278 989

>> g(inputvector)

ans =

-71.4000 -71.4000 -71.4000

>> g(572)

ans =

-71.4000

>> h(572)

ans =

3926196

>> h(inputvector)

ans =

3926196 927396 11737440

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**Problem 3.4**

Display each type of data using suitable plots. Set appropriate title, label, axis range for each plot. Set all plots in a 2 x 2 form using subplot. Export/save the 2 x 2 figure into a “.jpg” format. Insert the jpg file into the answer sheet. As well as your script and possible Matlab response. Appropriate plot layouts would be crucial for you to get full credit.

figure(1);

subplot(2,2,1), plot(time,xdisp);

title('displacement v times');

axis([0 55 0 1.2]);

xlabel('time(s)');

ylabel('displacement(m)');

t=1:1:12;

subplot(2,2,2), plot(t,measles);

title('Measles cases in Children per month');

axis([0 12 0 40000])

xlabel('month');

ylabel('Total Number');

subplot(2,2,3), x=-3:.1:3;

y=-3:.1:3;

[xx,yy]=meshgrid(x,y);

z=xx.^2+yy.^2;

surf(xx,yy,z);

xlabel('x-axis')

ylabel('y-axis')

zlabel('z-axis')

subplot(2,2,4), plot(magnitude,frequency)

title('The frequency response');

axis([0 -15 0 100000]);

xlabel('magnitude')

ylabel('frequency(hz)')

