Mansoura University
Faculty of Engineering
Electronic and Comm. Dept.

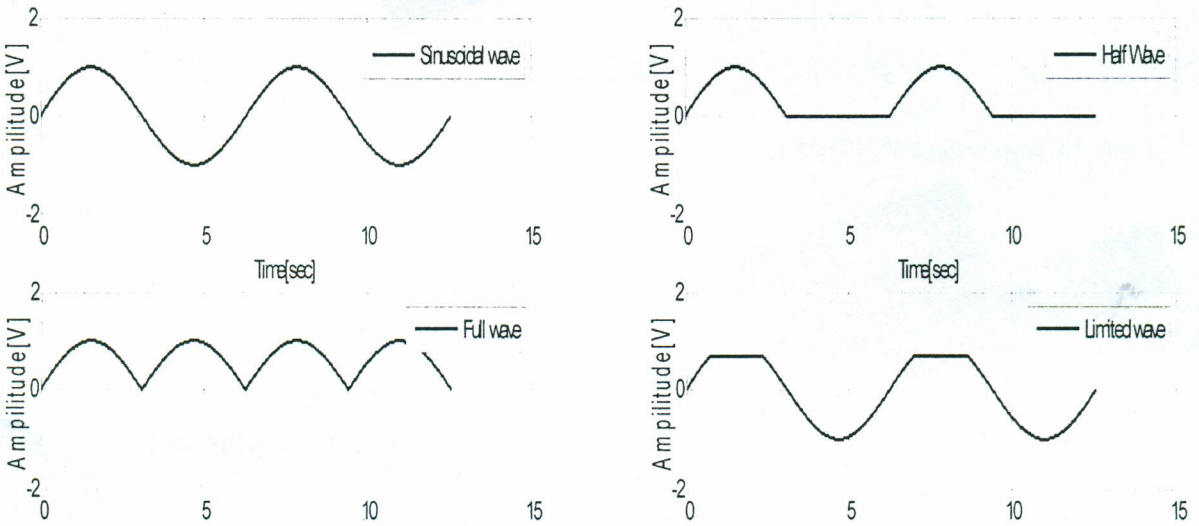
Exam on Computer Applications
1st Year
Two page Term 2012-2013

11 / 6 /2013 **Full Mark= [60]** **Time allowed: 2 Hours**

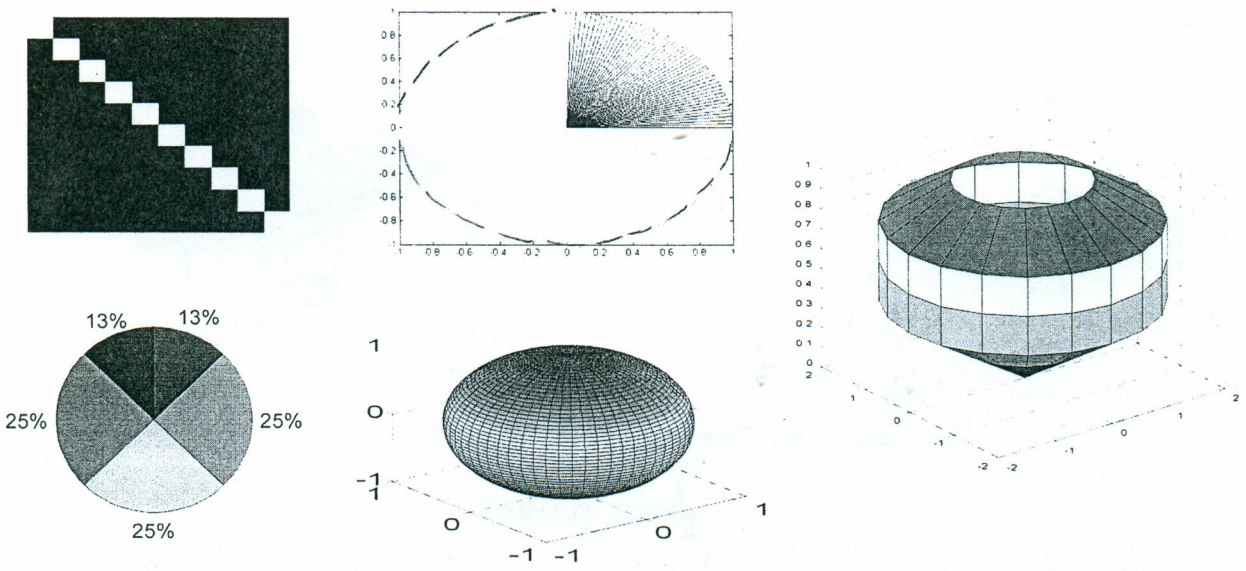
Q1. Given x = [1 3 2;-1 2 6], Find the results of the commands **[20 marks]**

x(1:2,1:2)	rand(size(x))	rem(x(:),2)	sign(x)	isempty(x)
eye(length(x))	cumsum(x(:))	det(x)	stem(x(:))	stairs(x(:))
Linspace(1,7,7)	bar(x)	sphere(3)	magic(5)	roots(x(1,:))
Pie3(x(2,:))	area(x(2,:))	Plot(x(2,:))	Barh(x(2,:))	conv(x(1,:),x(2,:))

Q2. Write a script to obtain the following figure **[8 marks]**



Q3. a) Write a script to obtain the following figure **[20 marks]**

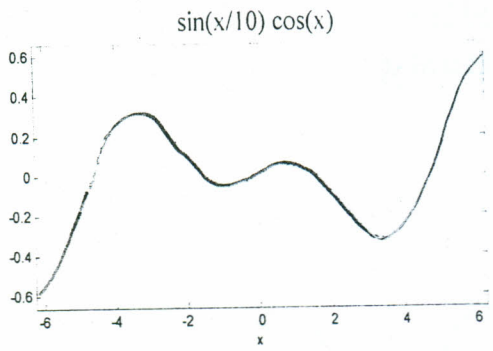


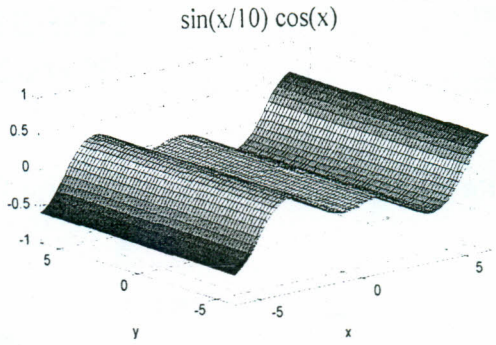
b. Define a function ***f*** that takes value ***x*** and calculate[s and returns by $y=x^2-4$.

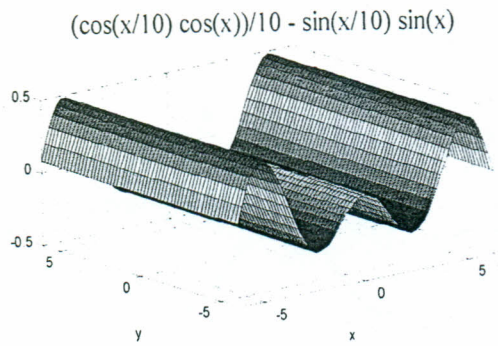
Q4.Using symbolic functions write a code to define a function [12 marks]

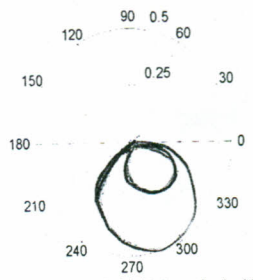
$$f(x) = x^2 - 6 \qquad y(x) = \sin(\frac{x}{10})\cos(x)$$

a) Find :(i) $\frac{df(x)}{x}$ ii) $\int f(x)dx$ and obtain the following figures





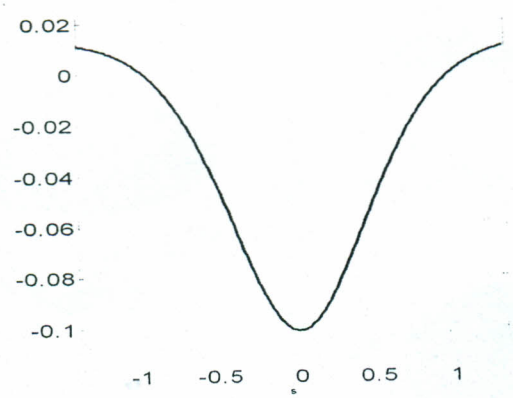


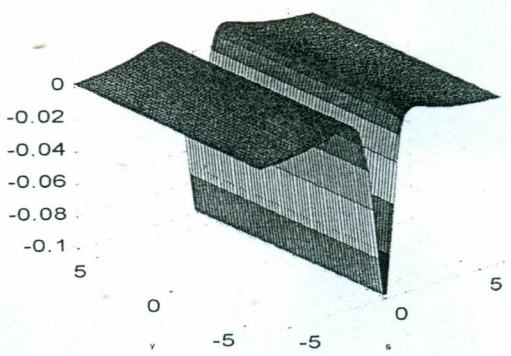


r = (cos(x/10) cos(x))/10 - sin(x/10) sin(x)

b) Calculate Laplace transform of f(x) & Draw its absolute values as follows

$$(i\,(i/10+s))/(2\,((i/10+s)^2+1)) + (i\,(i/10-s))/(2\,((i/10-s)^2+1)) \qquad (i\,(i/10+s))/(2\,((i/10+s)^2+1)) + (i\,(i/10-s))/(2\,((i/10-s)^2+1))$$





Best Wishes

Dr. Nihal Fayez