

Name: _____

Section: _____

EE322 Fall 2008 Exam 1: Part 2

- You will have the remainder of the lab period to take Part 2 of the exam.
- This portion of the exam is closed book/notes/calculators, but you are free to use MATLAB help as needed.
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1. (10 pts) Calculations. Determine the following values USING MATLAB. Write the lines of code you used to find your answers.

a. $100e^{-3} =$ _____

b. $\cos(100^\circ) =$ _____

c. $(40 + j30)(40 - j30)^2(0.02)j =$ _____

d. $\sum_{x=-25}^{25} n^3 =$ _____ (Note: n is an integer)

e. What is the phase angle (in degrees) of $-31 + j43.8$? _____

(Turn this sheet over for Problem 2)

2. (20 pts) Programming.

- a. Write a MATLAB function that will compute the value of the voltage signal given by $y = 2e^{-1.5t} \cdot \cos^2(2\pi 3t)$. Call this function *myfunction*. You do not need to include comments.

What is the name of the file that you created for this function? _____

- b. Using your *myfunction* function, create a plot of two functions on the same plot:
--the values of this function for $t=0$ to $t=1.5$ sec, at time intervals of 1 msec.
--the values of $2e^{-1.5t}$ for the same time, in a red dashed line.
Properly label your plot and give it a suitable title.

Print out your code for the function, the code for the plot, and the figure. Be sure that your name is displayed somewhere on your printouts. Your name is important if multiple midshipmen are printing at the same time.