

## Laboratory #3

Issued: Aug. 31, 2009

Due: (Section A) either Sep. 8 or 9 due to Labor Day Holiday, (B) Sep. 8, (C) Sep. 9.

This lab explains the basics of MATLAB and using MATLAB to solve simple mathematical expressions and basic operations involved in working with vectors and matrices.

## Reading

All reading and problems for the laboratory come from *MATLAB: An Introduction with Applications (3rd edition)* by A. Gilat

- Chapter 3: Mathematical Operations with Arrays
- Do tutorials 3-1 and 3-2 and sample problems 3-1
- Chapter 4: Script Files

You do not have to submit solutions for the sample problems, it is for your practice.

## Notes

Pre-lab problems are due at the beginning of lab; regular problems are due at the end of lab but should be worked on before lab. If you need assistance with pre-lab problems, please contact teaching assistants or Dr. De Leon during office hours or by email.

Your solution to the lab should be a printout of the Matlab .m-file you typed as well as the produced output (see posted lab format as an example).

## Pre-Lab Problems

- 1) What type of quantity will the following Matlab code produce:  $A = [4 \ 8 \ 2 ; 2 \ 4 \ 3 ; 4 \ 7 \ 23]$   
(Examples include: 3x3 matrix, 1x10 vector, 4x1 vector, etc ...)
- 2) If B is a column vector, what type of quantities do X and A have to be (matrix and/or col/row vectors) for the following expression to make sense:  $X=A \setminus B$ ?
- 3) Given a vector  $x = [2 \ 5 \ 1]$ . Write out y where y is given as:  $y=x.^2$

All code needs to be in Matlab script files:

- 4) Chapter 3: 1, 7, 12
- 5) Chapter 4: 6

## Regular Problems

Chapter 3: 13, 15, 18

Chapter 4: 1, 11