HWM1

NAME MISSING?
Loose Sheet

16/35

12. Complex numbers: which of the following expressions are valid in Matlab®?
a) 1+3i b) 1 + 3 i c) (1 + 3i)i d) j^4i

13. What special property does the matrix B below have? (Code snippet is from "Learning Matlab 7" published by the Mathworks Inc., 2004, ISBN 0-9755787-090000.)

B = magic(4)

B =

16	2	3	13
5	11	10	8
9	7	6	12
4	14	15	1

All colum Any way you traverse the array will add to the same value.
horizontally, vertically, slanted

14. Array Indexing. List the result of the following commands performed on matrix B above.
a) B(3, 2) b) B(4, :) c) B(end,1) d) B([4, 2], [3, 3])

7 4 14 15 1 4 15 15 / 10 10

15. Use the colon operator in commands to do each of the following with matrix B from problem 13:
a) Extract the four entries in the center 2 x 2 area in B. B(2:3,2:3)
b) Extract the 3rd column of B. B(:,3)
c) Extract the four entries that are in both an even numbered row and an even numbered column. B(2:2:end,2:2:end)
d) Reverse the order of the rows and in B and reverse the order of the columns in B. B(4:-1:1,4:-1:1)

16. In the Matlab® Primer, page 1-17, some Matlab® functions are described. List their names and what they do.

17. What entry under the File menu in Matlab® would you click on to set the output format to "compact"? (You may have to use Matlab® itself to answer this question.)
Under Home goto preferences select Command window and change Numeric Display to compact

REF: [1] The Mathworks, Inc, *Matlab® Primer*, Natick, MA: The Mathworks, Inc, 2012.

16.
eye identity matrix
zeros matrix of zeros
ones matrix of ones
diag Create or extract diagonals
triu upper triangle part of matrix
tril lower triangular part of matrix
rand randomly generated matrix
hilb hilbert matrix
magic magic square
toeplitz matrix with one row and one column

max: finds max of array
disp: display whatever you pass
clc: clear screen

sin cos tan asin acos atan exp log rem abs round sqrt floor
ceil max min sort sum prod median mean std any all
eig chol svd inv lu qr hess schur rref expm sqrtm poly
det size norm cond rank