no name??

Homework M1:
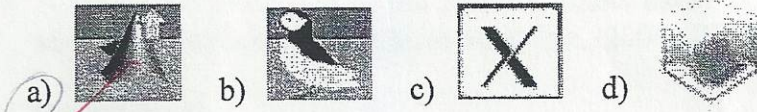## *Matlab Primer* [1] Pages 1-2 to 1-17

35 35

1. Which of the following is the Matlab® icon that you double-click on the computer's desktop to launch Matlab®?

   a)   b)   c) X   d)

2. What company's website would you visit for help with Matlab®?
   a) McGraw Hill   b) Comsol   c) Mathworks   d) IBM

3. What is the method of stopping a runaway Matlab® program? Hint: Google "matlab mathworks documentation" and go to the Mathworks site. There, type "stop busy programs" into the search box and look at the first entry that comes up. It tells what is supposed to work, but you may have to hit the magic keys more than once.   Ctrl + C

4. Which of the following is the Matlab® command prompt?
   a) \$ b) >>   c) #   d) !   e) %   f) //

5. What keystroke shortcut retrieves previous Matlab® commands?
   a) up arrow   b) -   c) CTRL-U   d) -n (where n means nth previous command)

6. Write down the Matlab® command you would use to create the matrix A shown below.

$$A = \begin{bmatrix} 2 & 4 & i & 0 \\ 1 & 6 & 9 & -7 \end{bmatrix}$$ >>A = [2, 4, i, 0; 1, 6, 9, -7]

7. Write down the Matlab® command you would use to create each of the following:
   a) A 3 (row) by 5 (column) matrix (called R1) of random numbers between 0 and 1   R1 = rand(3,5)
   b) A 2 by 2 matrix called Q containing all 1's.   Q = ones(2,2)
   c) A 1 by 10 matrix called Vec containing all 0's.   Vec = zeros(1,10)

8. Write down the Matlab® command you would use to subtract 1 from every entry of a matrix called B.   B=B-1

9. Write down the Matlab® command you would use to set the output format to 5 significant digits   format (which defaults to 5 sds)

10. Write down two different commands in Matlab® for squaring a matrix called B, (not element-by-element).   B*B, B^2

11. Concatenation. Suppose the following variables have been defined in Matlab®.

$$G = \begin{bmatrix} 1 & 2 \\ 3 & 5 \end{bmatrix} \qquad emp = [\ ] \qquad f = 4 \qquad v = \begin{bmatrix} 1 \\ -1 \end{bmatrix}$$

Write down the arrays that result from each of the following commands.

x4

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a) Q = [f; v]   b) [v, emp]   c) [G,[f; f]; [v', f]]   d) [G, v, G]   *seebelow*

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
       no!   *no*   *.0019*

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)

    equal row, column, diagonal sums

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

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])

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) Extract the 3rd column of B.
    c) Extract all the entries that are in an even numbered row and even numbered column.
    d) Reverse the order of rows and columns in B.

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.)

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

11) a) Q = [4; 1; -1]   b) [1; -1]   c) [1 2 4; 3 5 4; 1 -1 4]   d) [1 2 1 1 2; 3 5 -1 3 5]

14) a) 7
    b) 4,14,15,1
    c) 4
    d) [15 15; 10 10]

15) a) B(2:3, 2:3)
    B = b) B(:,3)
    c) B(2:2:4, 2:2:4)
    d) flipud(fliplr (B(:,:)))

16) max : returns largest element in array
    disp : displays contents of X w/o printing variable name
    clc : clears command window.

17) file → preferences... → command window → Numeric Display