

**Practice exercises for Matlab Quiz**

- 1) A vector is given by  $x = [8 \ 25 \ 60 \ 46 \ 6 \ 91 \ 18 \ 13 \ 89 \ 20 \ 72 \ 27 \ 84 \ 10 \ 59 \ 33 \ 2]$ . Using conditional statements and loop(s), write the code for a program that counts the number of elements in vector “x” that have values between 14 and 42 and creates a new vector “y” that contains only the elements of “x” in that specified range.

Do not use the Matlab functions “find” or “sum”. The program should work for any vector and vector size when vector “x” is changed and the requested range of values is changed. The output should look like:

count = 5 , y = 25 18 20 27 33

- 2) Write the code for a Matlab program that creates a square Matrix of any size whose elements have the value 7 along the diagonal and the value 3 elsewhere, like the example shown below:

A =

3	3	3	3	3	3	7
3	3	3	3	3	7	3
3	3	3	3	7	3	3
3	3	3	7	3	3	3
3	3	7	3	3	3	3
3	7	3	3	3	3	3
7	3	3	3	3	3	3

- 3) Write the code for a Matlab program that creates a Matrix of any size whose elements have the following configuration: On the first row, all the elements have the value of the corresponding column index; on the second column and the column before the last, all elements have the same value corresponding to the column index; and everywhere else, the element has the value corresponding to the value of the element just above multiplied by 3. See the example below:

A =

1	2	3	4	5	6	7
3	2	9	12	15	6	21
9	2	27	36	45	6	63
27	2	81	108	135	6	189
81	2	243	324	405	6	567