Practice Exercise Questions (Advance)

Notes 1: Consider it as fun part of your learning and don't take it as a burden or assignment with a forced deadline. Do exercise by yourself.

Notes 2: Do not consult the solutions directly, make sure you first attempt the questions by yourself and If you are unable to get it correctly than consult the solution.

Note 3: If feel difficulties in understanding the solutions, post your question in the Q/A section of the course. Do not forget to mention the question number you are querying about.

Note 4: If you feel you have some exciting questions, please inbox to me and I will add to the questions list there after review. This will help you fellows to have more practice and fun.

Note 5: **Have Fun**

Q:1. Consider an n*n matrix A = rand(n) where n is any positive number greater than 2. Write a statement which will return the four corner elements of the matrix A in a 2*2 matrix R such that

R(1,1) is the upper right corner element,

R(1,2) is the upper left corner element,

R(1,3) is the lower right corner element, and

R(1,4) is the lower left corner element.

Q:2. A word is said to palindrome if it reads the same backwards as forwards. Let X be a string containing some word, use MATLAB statements to check whether the word contained in X is a palindrome or not? The statement should return a logical 1 if it is a palindrome and 0 otherwise. Assume that the word should only contain letters from a – z or A – Z.

Q:3. Consider an M*N matrix A. Write a command for deleting one entire row or column.

For instance, `A = rand(5).` Now I want to delete the third row.

Q:4. Let us suppose we define the following five matrices.

```
a=[1;2;3]; b=[4;5;6]; c=[7;8;9]; A=[a,b,c]; B=[a,b];
```

Which of the following are not correct statements (will give out an error message)?

10.1. a+b

10.2. a*b

10.3. a.*b

10.4. A*b

10.5. A.*b

10.6. a'*b

10.7. a*b'

10.8. A*A

10.9. A.*A

10.10. A*B

10.11. A.*B

10.12. B*A

10.13. B*B

Q:5. Consider the following three row vectors or one dimensional arrays.

```
A = [8 9 10 11].
B = [5]
C = [9 8 5]
```

We want to collect all these vectors in one single matrix such that the all the entries are aligned from the right and if an entry is missing we will add a leading zero in the matrix from the left. The results matrix should look something like this.

```
X = [8     9     10    11
     0     0     0     5
     0     9     8     5].
```

Write MATLAB statements that will do this operation.

Q:6. Find a short MATLAB command that will build the following matrix

```
A = [ 1    2     3     4     5     6     7

      9    7     5     3     1    -1    -3

      4    8     16    32    64    128   256]
```

Note: try to detect the sequence in each row and then use the : operator.

Q:7. What will be the result of applying the command `[0 0 1 ]*A` to the following matrix.

```
A = [4     5     6     9
     7     8     9     9
     8     7     4     5]
```

Q:8. What will be the result of applying the command `[1 0 0; 0 0 1; 0 1 0] * A` to the following matrix.

```
A = [4     5     6     9
     7     8     9     9
     8     7     4     5]
```

Enjoy MATLAB