MATH.2720   Introduction to Programming with MATLAB
Homework on Cell Arrays, Structures, and Character Strings (Due 4/26)

Please email your file(s) to me at `stephen_pennell@uml.edu`

1. (From Lee, *Programming with MATLAB 2016*)
   Create a cell array to store the information in the following table.

'Carbon'	'C'	6	12.011
'Helium'	'He'	2	4.003
'Hydrogen'	'H'	1	1.008
'Nitrogen'	'N'	7	14.007
'Oxygen'	'O'	8	15.999

2. Use `cell2struct` to convert the cell array from problem 1 to a structure array. Call the structure fields 'Name', 'Symbol', 'AtomicNumber', and 'AtomicMass'.

3. Write a function file that generates two random integers between 10 and 30 and returns a character string consisting of the two integers joined together. For example, if the integers are 11 and 29 the output should be the string '1129' There is no input to the function. Hint: The command `randi([m, n], 1, k)` generates a $1 \times k$ array of integers uniformly distributed between m and n.

4. Write a function file that takes as input a character string consisting of integers and the character x, deletes the x's, and produces as output a character string consisting only of the integers. For example, if the input string is '1x23x456x7' the output string should be '1234567' Hint: Use `strfind` to locate the x's and then delete those entries from the string.

5. Write a function file that takes as input a word in the form of a character string, scrambles the letters, and returns the scrambled word as output. For example, if the input is 'MATLAB' the output might be 'LAMBAT' Hint: You might find the `randperm` command helpful. `randperm(n)` returns a random permutation of the integers 1 through n.