**MATLAB**

1. Given x = randn(1,100); how would you find a sorted array of x i.e. y = [sorted x from smallest to largest] value? Hint: doc sort
2. Given x = [5 3 4;2 1 3; 10 7 6],
   1. how do you find the inverse? What is the product of inverse \* x ?
   2. what is the matlab function that returns the diagonal elements of x?
   3. how do you find the sum of the diagonal elements of x?
   4. execute [v,d] = eig(x) and find out what is the product of v \* d \* inv(v)? This is the eigenvectors/eigenvalues you will be learning in your math too
3. Given 2 strings s1 = ‘hello’ and s2 = ‘world’, how would you combine (concatenate) the two strings to get s3 = ‘helloworld’?
4. Given the following string s4 = ‘The quick brown fox jumps over the wall’,
   1. what function would you use to find the index of the letter ‘f’? i.e. the output should be idx = 17 (17th character)
   2. How would you check if the string contains s5 = ‘fox’ or ‘Fox’?
5. How would you find the value of 520in MATLAB? Note that I don’t expect you to do 5 \* 5 \* 5 etc
6. How would you find the remainder of 13 divided by 5 in MATLAB?
7. a = abs(ceil(randn(1,13)\*10)),
   1. what is the purpose of the abs function?

* abs(X) helps to return an array Y such that each element of Y is the absolute value of the corresponding element of X. (eg. Abs (-5) = 5)
* If X is complex, abs(X) returns the complex modulus (magnitude), which is the same assqrt(real(X).^2 + imag(X).^2)
  1. How would you return me the elements that are even e.g. 2,4,6,8 etc