AML 610 Homework #1

**For all questions, please submit your R code, and a doc file with a copy of the screen output and plots (where applicable) to** [**smtowers@asu.edu**](mailto:smtowers@asu.edu)**.**

**Due Thus Sep 5th at 4pm.**

**The code in your R files should exhibit all of the good coding practices mentioned in** [**http://sherrytowers.com/2012/12/14/good-programming-practices-in-any-language/**](http://sherrytowers.com/2012/12/14/good-programming-practices-in-any-language/)

**Please do not just copy and paste code from the examples given in class into your code.**

**Please submit your files in a format hwk2\_<first name>\_<initial of last name>.R and hwk2\_<first name>\_<initial of last name>.doc**

1. Create a vector, called x, of all odd integers between 1 to 100
2. Get the length of the vector, and print it to standard output
3. Get the mean of the vector, and print it to standard output
4. Extract every 3rd element of x (starting with the first), and put it back into x.
5. Create a vector, called y, that is the elements of x in reverse order
6. Remove the 15th element of y, and the 3rd element of x and create a new vector z that is y times x
7. Get the index of the maximum value of z, and the maximum value, and print to standard output
8. How many elements of z are divisible by 3? Print the number to standard output.
9. Create a new vector, w, that is the integer part of z/4.
10. Create a 4x4 matrix, wmat, that is filled row-wise with w.
11. Print the diagonal elements of wmat to standard output
12. Change the value in the 4th column and 4th row of wmat to a 0
13. Fill a vector weigen with the eigenvalues of wmat
14. Using Google, read up on how to extract the real part of a complex number. Extract the real part of weigen into a new vector weigen\_real.
15. Print to standard output the maximum value of weigen\_real.