Homework 4 – Due April 21, 11:59 pm

For each program, please write out how you compiled, executed the program and result. You may include this code in as a comment.

1. Use LAPACK to write a function in C which calculates the eigenvalues of a positive definite matrix $\boldsymbol{A}$. Test the function with a simple example. Provide instructions on how to use and test the function and test your result with the output of `R`. [*15 points*]

2. Write a function in C which uses the R mathematical library to provide the loglikelihood of the gamma density. Illustrate with an example. [*15 points*]

3. Modify the multivariate skewness function discussed in class to use the `.Call()` function while calling C from R. [*20 points*]