Math 686: Chapter 3a Homework – Spring 2020
Due: Tuesday, February 11, 2020

1. Exercise 3.1 in the textbook. Also, compute approximations to the integral

$$\int_0^1 e^{-t} \sin t\, dt$$

    using the quadrature rules in 3.1a,b,c as well as for the midpoint rule and for the trapezoid rule (Matlab is recommended). Make a table showing the errors associated for each method and discuss your observations. Note that you should be able to write down the exact value of this integral in order to help compute the errors associated with each method.

2. Exercise 3.2 in the textbook. Note that in 3b the definition for $\omega(t)$ should be $\omega(t) = (1 - t^2)^{-1/2}$.