Lab #7

Instructor: Dr. Ha Viet Uyen Synh.

Theoretical Models for Computing

1. Develop a user-friendly computer program for Gauss quadrature. Test it by using the following function

$$\int_0^1 x^{0.1}(1.2 - x)\left(1 - e^{20(x-1)}\right) dx$$

If necessary, the true value is 0.602298.

2. Develop a user-friendly program to apply a Romberg algorithm to estimate the derivative of a given function. Test it by using the following function

   $f(x) = 5e^{-2x}x$.