Homework 5: due March 12th 11:59PM.

Submit complete code for the following two questions and the output of your code.

1. Implement the Romberg algorithm in the textbook (page 219) and use it to compute eight rows and columns in the Romberg array for $\int_{1.3}^{2.19} \frac{sin(x)}{x} dx$ Display the value at R[8][8]. Use the *sin(x)* that you have implemented for homework 2. Fixed the accuracy for your *sin(x)* to $0.5*10^{-10}$. [10 points]

   Submit sine.m & Romberg.m & Test_Romberg.m

2. Using adaptive Simpson procedure, find an approximate value for integral $4 * \int_0^1 \frac{1}{1+x^2} dx$. Set $\varepsilon = 0.5 *10^{-5}$ and *level_max = 4*. [10 points]