CPE 200 (Numerical Analysis)

Assignment # 1

Due Date: Wednesday 10th, October 2018

Let f(x) = xsin(x) – 1, and starting with [0 , 2]. Write one C++ program that does the following:

1. Find the roots of f(x) = 0 accurate to 5 x 10-6 using the Bisection Method.
2. Print all approximated roots cn.
3. Print the number of iterations needed to reach given accuracy using Bisection Method.
4. Find the roots of f(x) = 0 accurate to 5 x 10-6 using the False Position Method.
5. Print all intervals [an, bn].
6. Print the number of iterations needed to reach given accuracy using False Position Method.

*Note: given accuracy is δ*