

Assignment 2

Root finding

Submission due on or before 20 Aug 3:00 pm.

Submit on moodle.

Viva: Wednesday 20 Aug 3:00 pm onwards, Schedule will be posted on moodle.

Write a code for computing root of the equations below using

- (a) Bisection method
- (b) Newton method
- (c) Secant method.

Use the code for solving the following equations,

1. $\exp(x) - x - 2$
2. $x^5 - 8x^4 + 44x^3 - 91x^2 + 85x - 26$

In each case, stop the iterations once the difference between two consecutive values is lesser than 10^{-6} .

- A. For bisection method: Choose interval $[-4,1]$ for both problems.
- B. For Newton method: Choose starting guess as 1 for both problems.
- C. For Secant method: Choose the initial guesses as -4 and -1 for both problems.

Also, your code should write output a data file for each case, in two columns format in which first column is iteration count and second column is absolute error as discussed in class.