

Assignment 3

1. Given the function $f(x) = x^3 + 2x^2 - 3x - 1 = 0$ has a simple zero in the interval (1,2). Apply the following numerical (iteration) methods to approximate that root:
 - (a) The bisection method
 - (b) The secant method
 - (c) The fixed point method
 - (d) The Newton-Raphson method
 - (e) The method of false position

Give a comparison of the results in shape of a table and also make a tabular result for the error at each step after 20 iterations. (Initial guess $x_0 = 1$ and $x_1 = 2$)

2. Consider the above problem. Compare the above with the results obtained by Chebyshev iteration method based on 2nd degree polynomial.
3. Now you consider one problem. It needs to be different from the others. Do the above and write down your observation on the same.

***** END *****