Solution of Nonlinear Equations

1. Write a program to solve non-linear equations using the Half Interval method. Your program should read an initial guess from keyboard and display the followings if the solution is obtained:
      a. Estimated root of the equation
      b. Functional value at calculated root
      c. Required number of iterations

2. Write a program to solve non-linear equations using Newton's method. Your program should read an initial guess from keyboard and display the followings if the solution is obtained:
      a. Estimated root of the equation
      b. Functional value at calculated root
      c. Required number of iterations

3. Write a program to solve non-linear equations using the Secant method. Your program should read an initial guess from keyboard and display the followings if the solution is obtained:
      a. Estimated root of the equation
      b. Functional value at calculated root
      c. Required number of iterations

4. Write a program to solve non-linear equations using the Fixed Point Iteration method. Your program should read an initial guess from keyboard and display the followings if the solution is Obtained:
      a. Estimated root of the equation
      b. Functional value at calculated root
      c. Required number of iterations

5. Write a program to implement Horner's method.

6. Compare various method for solving non-linear equation in terms of speed, accuracy and ease of coding.

Note: Lab report must contain algorithm, source code and output of each programming problem.