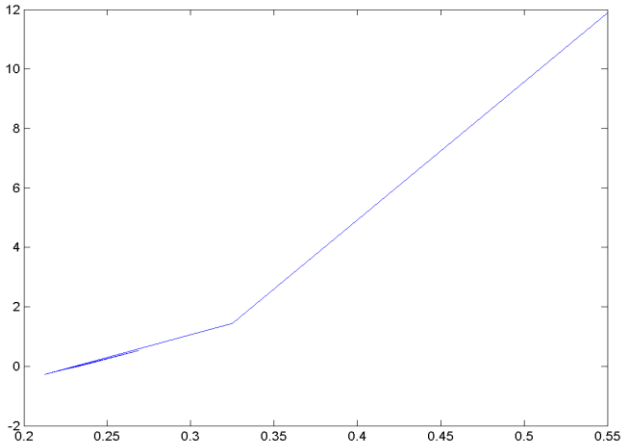
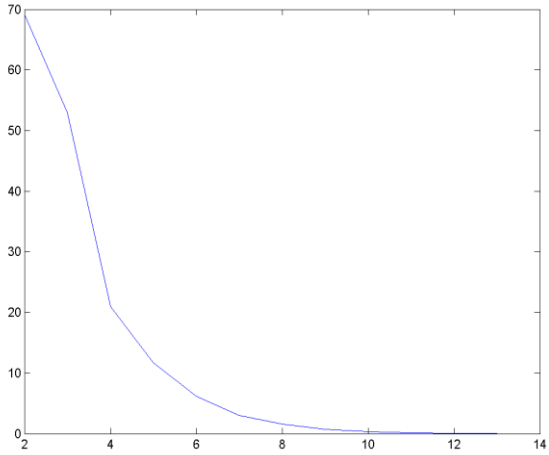
Q.1)

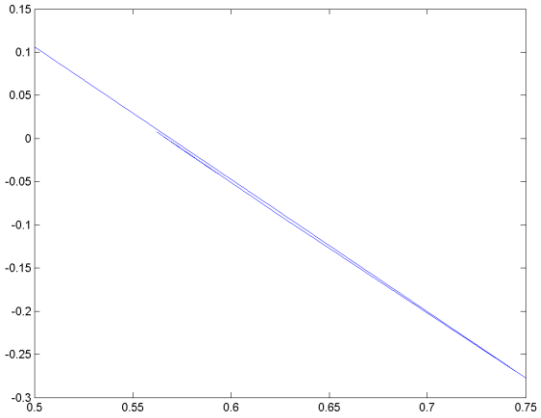
A) Bisection Method:

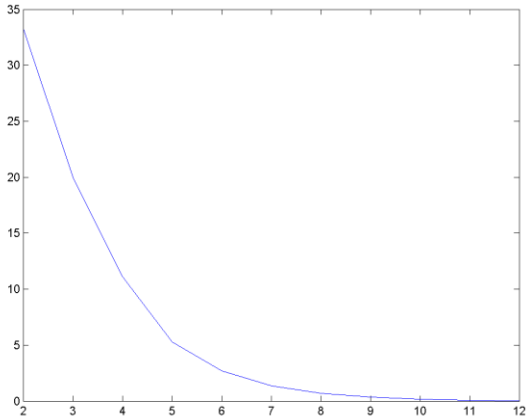
- f(x) = $600x^4 - 550x^3 + 200x^2 - 20x - 1$
- $x_l$=0.1, $x_u$=1.0
- Solution: x=0.2324




- f(x) =$e^{-x} - x$ $x_l$=0, $x_u$=1.0
  Solution x=0.5671



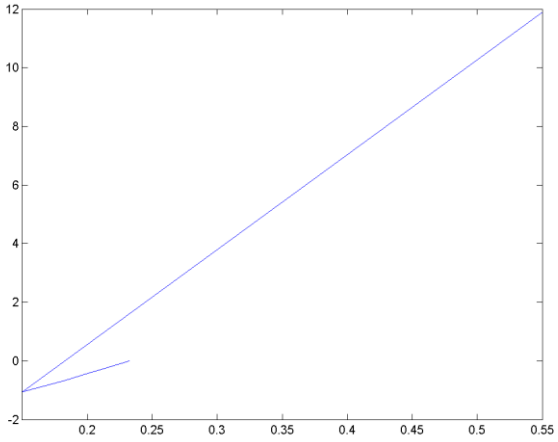



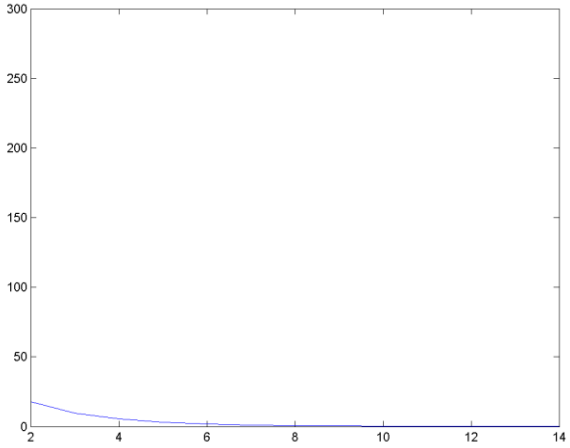

Plot f(X) vs X

Plot rel error vs iteration

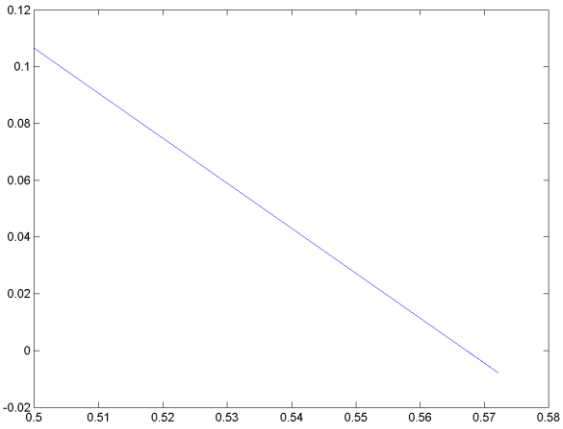
B) False position method:

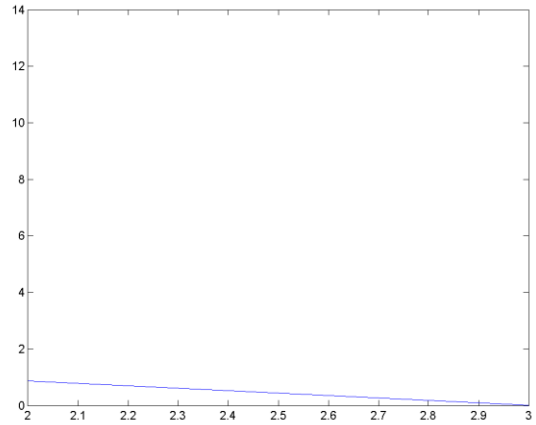
- f(x) = $600x^4 - 550x^3 + 200x^2 - 20x - 1$, $x_l$=0.1, $x_u$=1.0
  Solution x=0.2322



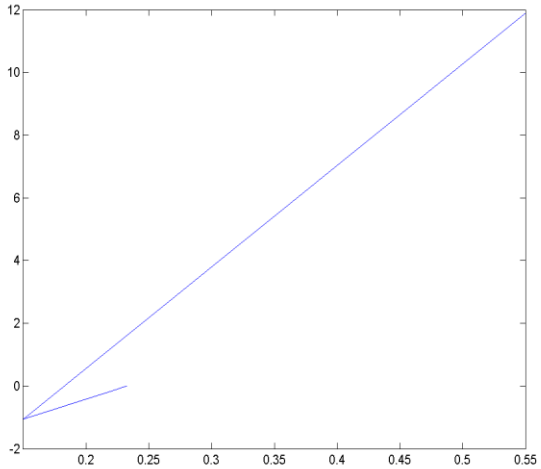

- F(x) =$e^{-x} - x$ , $x_l$=0, $x_u$=1.0
  Solution x=0.5671

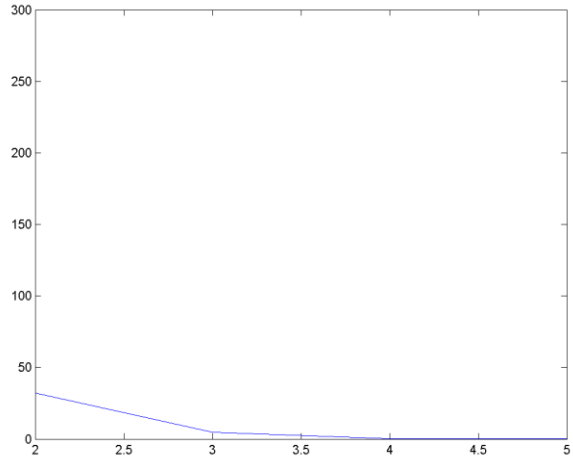


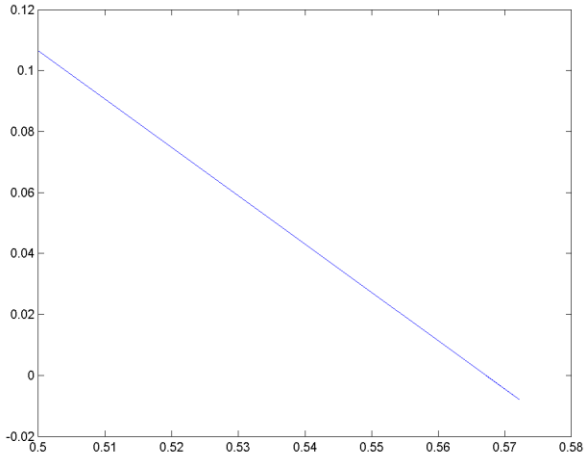
C) Modified false position method:

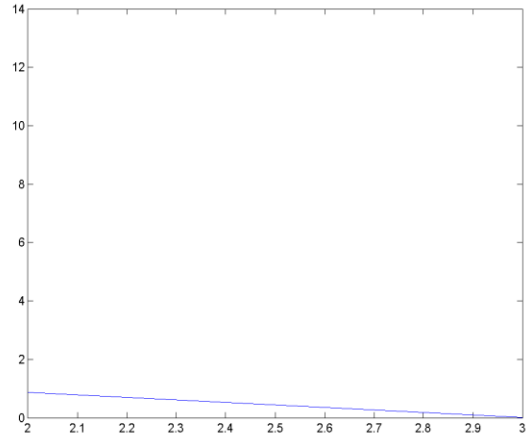
- f(x) = $600x^4 - 550x^3 + 200x^2 - 20x - 1$ , $x_l$=0.1 ,$x_u$=1.0
  Solution x=0.2324



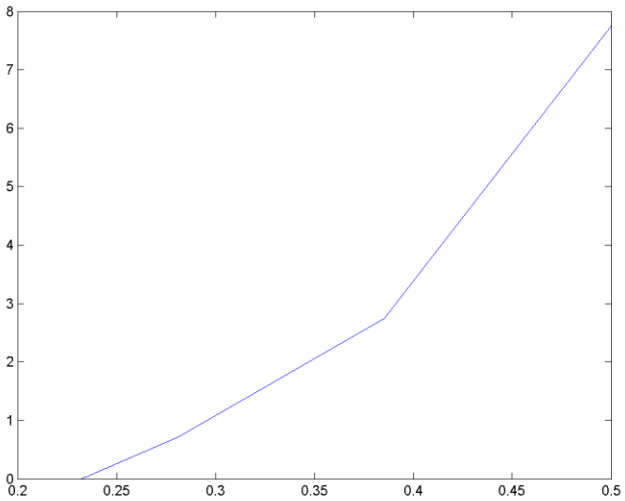

- f(x) =$e^{-x} - x$ , , $x_l$=0 ,$x_u$=1.0
  Solution x=0.5671

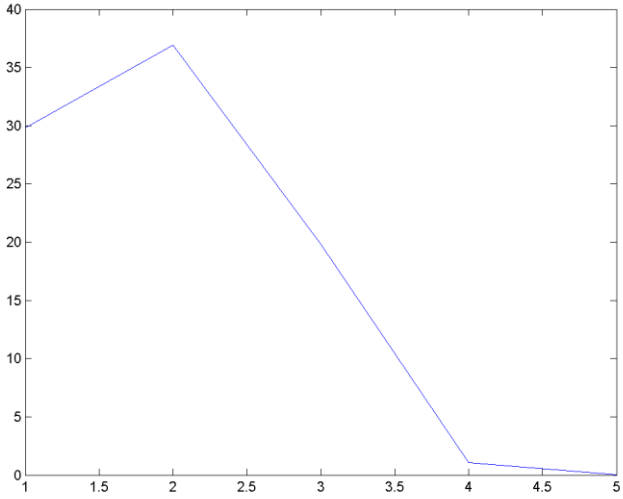


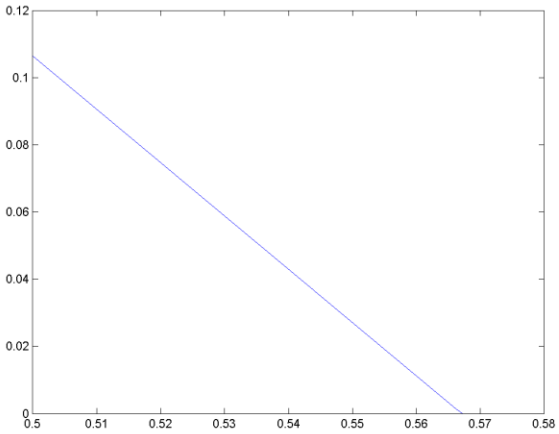
D) Newton-Raphson Method:

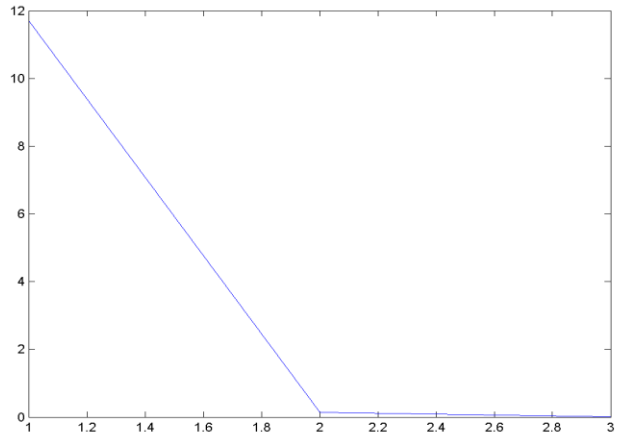
- f(x) = $600x^4 - 550x^3 + 200x^2 - 20x - 1$ , $x_0$=0.5
  Solution x=0.2325



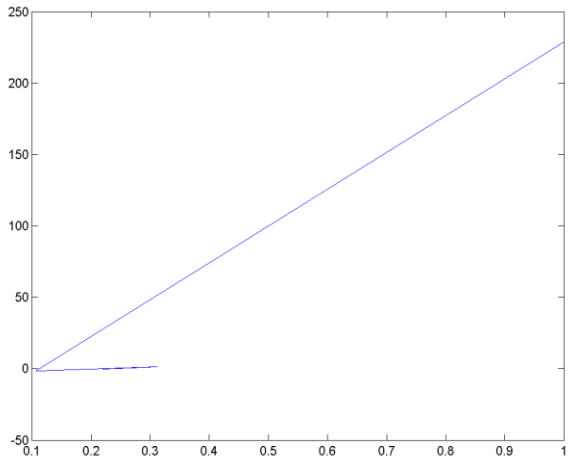

- f(x) =$e^{-x} - x$ , $x_0$=0.5
  Solution x=0.5673

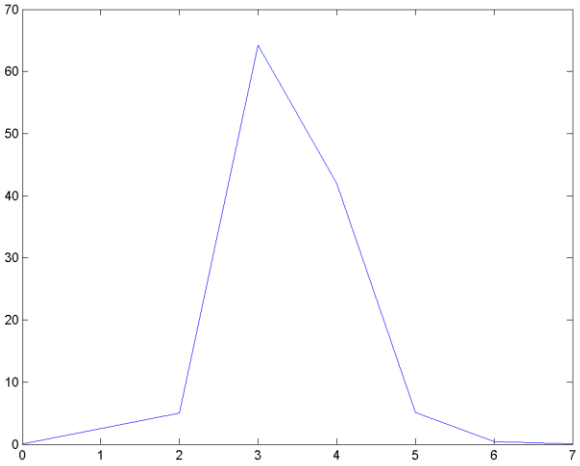


E) Secant Method:

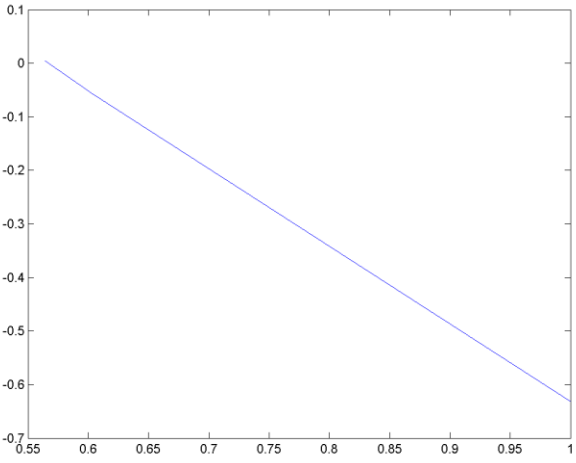
- f(x) = $600x^4 - 550x^3 + 200x^2 - 20x - 1$, $x_{-1}$=0.1, $x_0$=1
  Solution x=0.2324

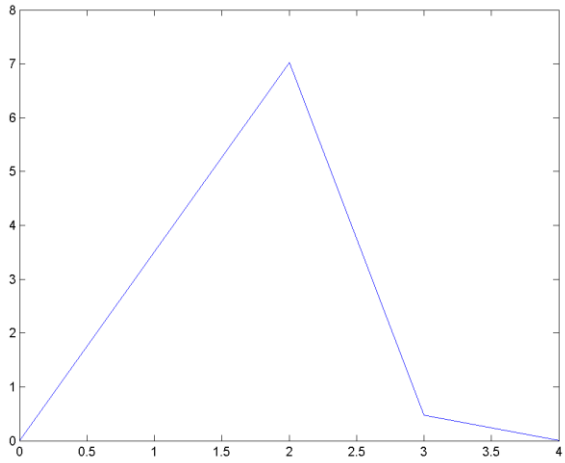



f(x) =$e^{-x} - x$ , $x_0$=0.1 x1=1

Solution x=0.5671

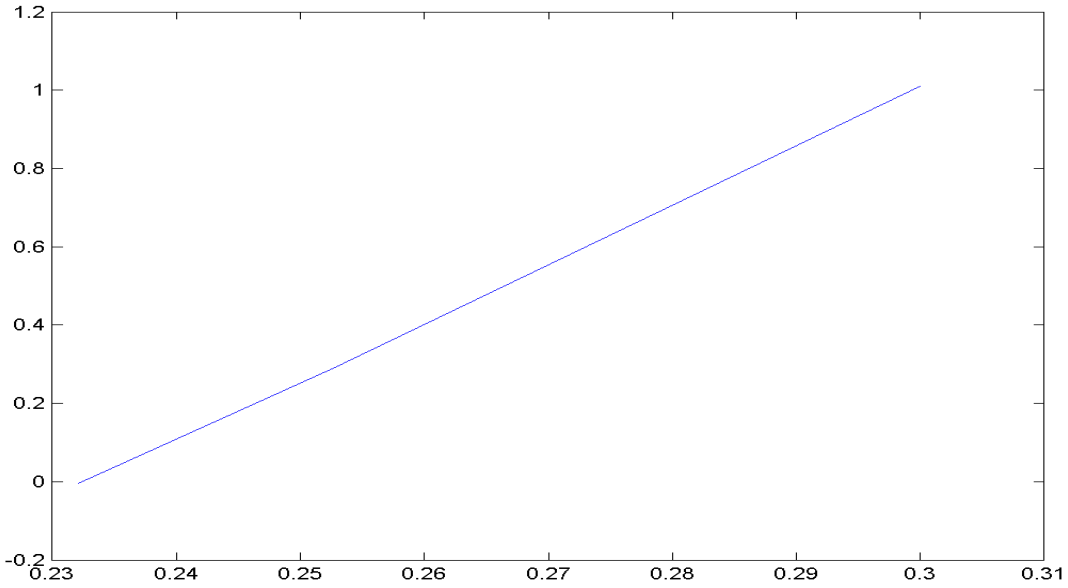


Q.2)

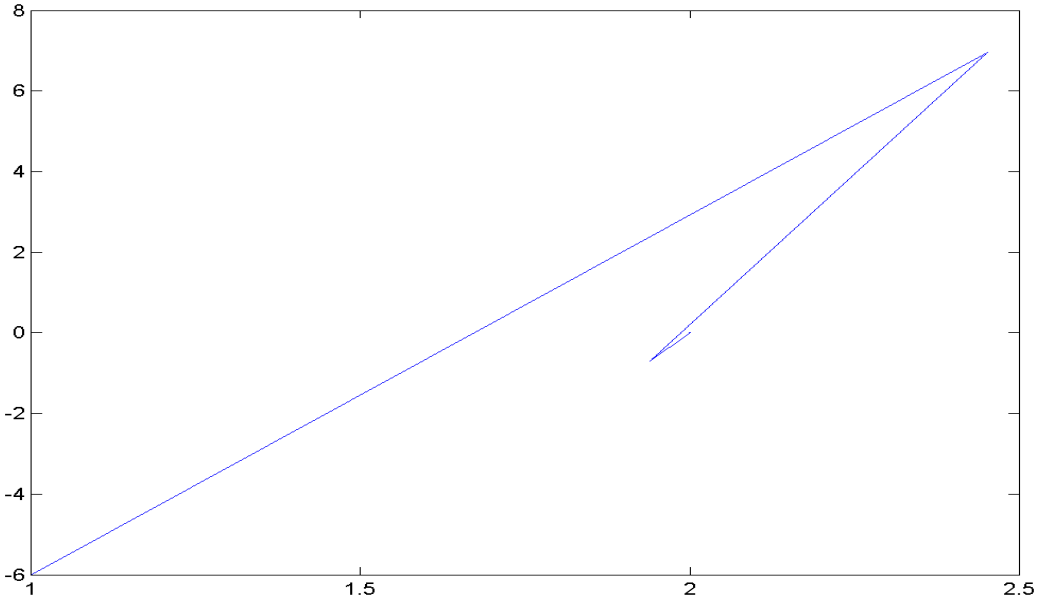
F) Muller Method:

- f(x) = $600x^4 - 550x^3 + 200x^2 - 20x - 1$ , $x_0$=0.0 ,$x_1$=0.1, $x_2$=0.3
  Solution x=0.2324



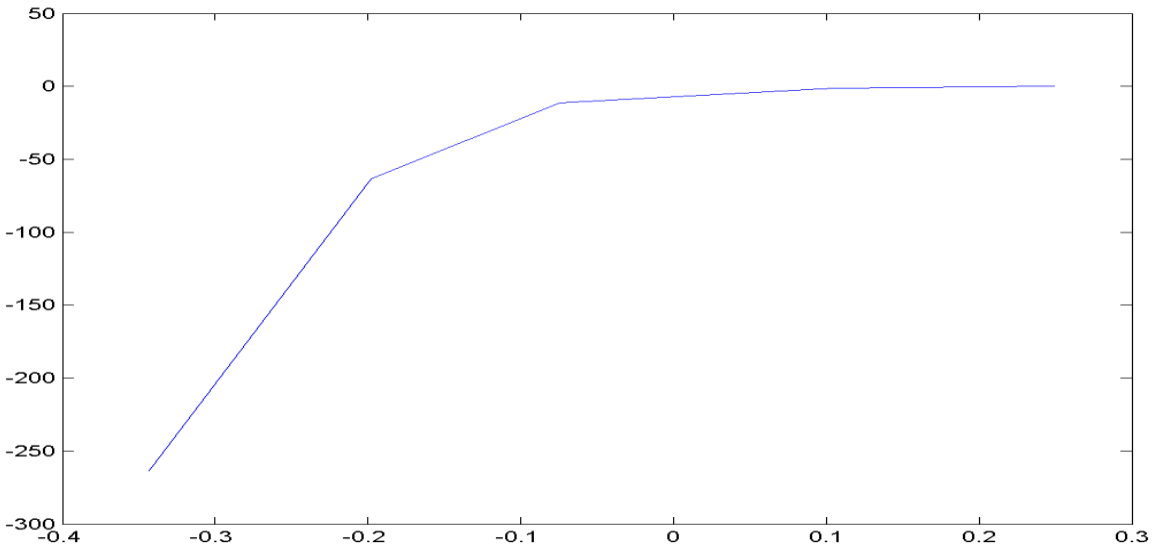

f(x) =$x^3 + x^2 - 4x - 4$ , $x_0$=0, $x_1$=0.5, $x_2$=1

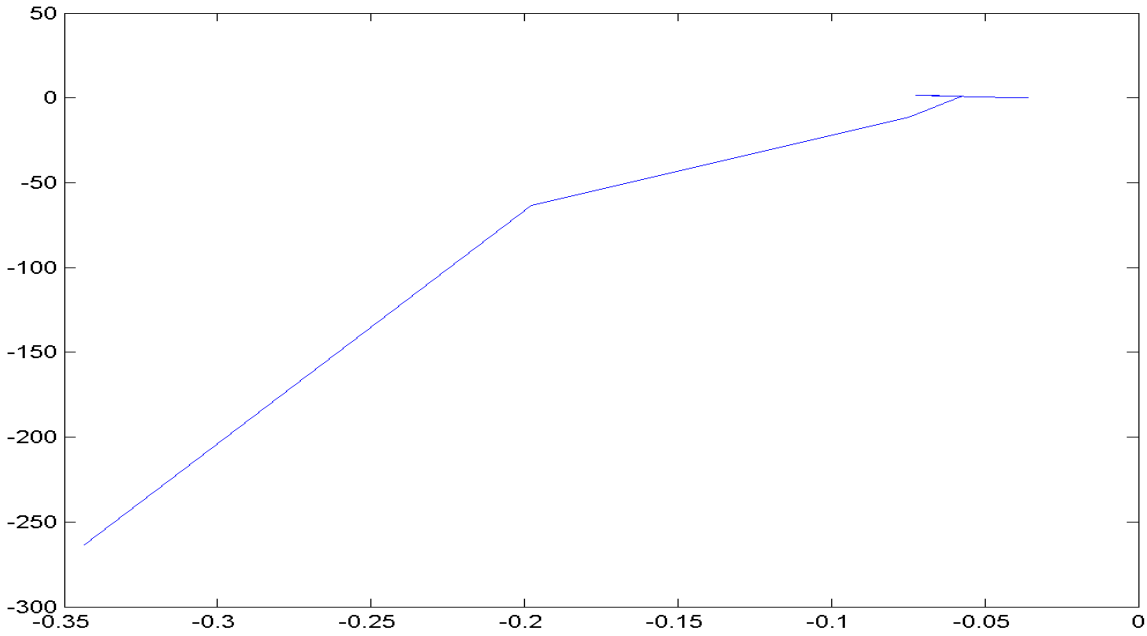
Solution x=2



(G)Bairstow Method:

- f(x) = $600x^4 - 550x^3 + 200x^2 - 20x - 1$ , r=-1 s=-1
- Solution x=0.2324, -0.0358



f(x) =$x^3 + x^2 - 4x - 4$ ,

Solution x=2, -1