

MA311 (Scientific computing)-IITG

23-08-18

1. Let $f(x) = e^x - x - 1$. Compute the approximate order of convergence of both Newton's and Modified Newton's methods in finding a zero of f in the interval $[-1, 1]$.
2. Compute the approximate order of convergence of the fixed point iteration in finding the fixed point of the function $\cos x$ in $[0, \pi/2]$.
3. Let $f(x) = x^3 + 3x^2 - 1$, compare the approximate order of convergence of both secant and Newton's method in finding the root of f in the interval $[-3, -2]$.