

Command Window

clear

clc

syms x

format short g

f = exp(-0.5 * x) * (4 - x) - 2;

fprime = diff(f)

x = 0.5;

for i = 1:10;

iter(i+1) = i;

x(i) = x;

x = double(subs(x - (f/fprime)))

x(i+1) = x;

ea(i+1) = abs((x(i+1) - x(i)) / x(i+1)) * 100;

if ea(i+1) <= 1E-21;

break

end

end

ZaRogu = table(iter', x', ea')

ZaRogu.Properties.VariableNames = {'iteration number', 'values of X', 'errors'}

Output

ZaRogn =

Iter	Values of x	Error
0	0.5	0
1	0.83889	40.397
2	0.88496	5.2054
3	0.88571	0.084972
4	0.88571	2.2247×10^{-5}
5	0.88571	1.5293×10^{-12}
6	0.88571	0