

Aigbogun Elicdu Mcleod  
 17101604 1091  
 Petroleum Engineering

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" Command window
clear
clc
syms x
format short g
f = exp(-0.5 * x) * (4 - x) - 2;
fpr = diff(f);
x = 0.5;
for i = 1:10
    iter(i+1) = i;
    x(i) = x;
    n = double(subs(x - (f/fpr)))
    x(i+1) = x;
    err ehis(i+1) = abs((x(i+1) - x(i)) / x(i+1)) * 100;
    if ehis(i+1) <= 1E-2,
        break
    end
end
mcleod = table('iter', 'x', 'ehis')
mcleod.Properties.VariableNames = {'iteration number', 'values of x', 'error'}
  
```

Scanned with CamScanner

Output  
 mcleod =

iter	values of x	error
0	0.5	0
1	0.83889	40.257

Output  
mcleod =

Iter	values of $x$	error
0	0.5	0
1	0.83889	40.357
2	-0.88496	5.2054
3	0.8880	0.084972
4	0.88571	$2.2247e^{-05}$
5	0.88571	$1.5293e^{-12}$
6	0.88571	0