

ELUWA TOCHUKWU DIVINO E

17/ENGG07/010

PETROLEUM ENGINEERING

~~PTE~~ ENG 382

Assignment 2.

Solution

Command window

clear

clc

format short g

x(1) = 0.5;

K = 1;

tol = 1E-21;

max1 = 50;

err(1) = 0;

Syms x

g = (exp(-0.5 \* x) \* (4 - x)) - 2;

gprime = diff(g);

for K = 2 : max1;

x(K) = (x(K-1)) - ((subs(g, x(K-1))) / subs(gprime, x(K-1)));

K = [K K];

err(K) = abs(x(K) - x(K-1)) \* 100;

if err(K) <= tol; break; end;

end

table = [K' x' err']

Answer

1	0.5	0	0
2	0.83889	<del>33.8889</del>	33.889
3	0.88496	0.041065	4.6065
4	0.88571	0.0007526	0.07526
5	0.88571	1.9704e-07	1.9704e-05
6	0.88571	1.3545e-14	1.3545e-12
7	0.88571	0	0