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Dept: Mechanical Engineering

Matric no: 171ENGO61075

Course code: ~~171ENGO61075~~ ENG328

Command window

Clear

clc

syms x

format short g

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

fprime = diff(f);

A = 0.5;

For i = 1:10;

itar(i+1) = i;

x(i) = x;

x = double ( 1/abs ( x - (f/fprime) ) )

X<sub>0+1</sub> = x;

eq(i+1) = abs ( (X(i+1) - X<sub>0</sub>) / X(i+1) ) \* 100;

if eq(i+1) <= 1E-2;

break

end

end

ZerRggv = table (itar', x', eq')

ZerRggv.properties.VariableNames = { 'iteration number', 'values of x', 'error' }

OUTPUT

Zakaga =

Iter	value 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	$2.22470 \cdot 10^{-5}$
5	0.88571	$1.52930 \cdot 10^{-12}$
6	0.88571	0