

ENG 382 Assignment

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Command window

clear

clc

close all

format short g

$x(1) = 0.5; k = 1; tol = 1E-21; max(100);$

$err(1) = 0;$

Syms x

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

$yprime = diff(y)$

for $k = 2: max(1);$

$x(k) = (x(k-1)) - (subs(y, x(k-1))) / subs(yprime, x(k-1));$

$k = [k k]$

$err(k) = abs(x(k) - x(k-1))$

if $err(k) < tol$, break, end

end

table = [k' x' err']

table

1	0.5	0
2	0.83889	0.83889
3	0.88496	0.046065
4	0.88571	0.0007526
5	0.88571	1.9704e-07
6	0.88571	1.3545e-14
7	0.88571	0