

JHPESA OGHENEMINE JOEL  
FHENG01/014  
Chemical Engineering  
ENCA 382 LMS

Command Window

Clear

clc

syms x

format short g

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

$$f_{\text{prime}} = \text{diff}(f);$$

$$x = 0.5;$$

for i = 1:10;

$$\text{iter}(i+1) = i$$

$$x(i) = x;$$

$$x = \text{double}(\text{subs}(x - (f / f_{\text{prime}}))$$

$$x(i+1) = x;$$

$$eq(i+1) = \text{abs}((x(i+1) - x(i)) / x(i+1)) * 100;$$

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

break

end

end

tablo = table(iter', x', eq')

tablo.Properties.VariableNames = [reaction number,  
'values of x', 'errors']

Output.

~~tablo =~~

$\epsilon_{\text{abs}} =$

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	$2.2247 \times 10^{-5}$
5	0.88571	$1.5293 \times 10^{-12}$
6	0.88571	0