

BULLEM, FLORENCE ILUEH-OCHUWEH

16/ENG01/005

CHEMICAL ENGINEERING

ASSIGNMENT 2

```
commandwindow
clear
clc
syms x
format short g
f = (exp(-0.5*x))*(4-x))-2
florenc = diff(f)
z = f/florenc
f =
- exp(-x/2)*(x - 4) - 2

florenc =

(exp(-x/2)*(x - 4))/2 - exp(-x/2)

z =

(exp(-x/2)*(x - 4) + 2)/(exp(-x/2) - (exp(-x/2)*(x - 4))/2)
x = 0.5
x = double(subs(x - (f/florenc)))
x = double(subs(x - (f/florenc)))
x = double(subs(x - (f/florenc)))
x = double(subs(x - (f/florenc)))
x = double(subs(x - (f/florenc)))
x = double(subs(x - (f/florenc)))
x = double(subs(x - (f/florenc)))
x =

0.5

x =

0.83889

x =

0.88496

x =

0.88571
```

```

x =

    0.88571

x =

    0.88571

x =

    0.88571

x =

    0.88571
for i =1:100
    xf(i)=x
    iter(i+1)=i
    x = double(subs(x -z))
    xf(i+1) = x
    Ea(i+1)=abs((xf(i+1)-xf(i))/xf(i+1))*100)
    if Ea(i+1) <= 1E-9
        break
    end
end
iter'
xf'
Ea'
tableau = [iter', xf', Ea']
x =

    0.5

xf =

    0.5

iter =

    0    1

x =

    0.83889

xf =

    0.5    0.83889

```

Ea =

0	40.397
---	--------

xf =

0.5	0.83889
-----	---------

iter =

0	1	2
---	---	---

x =

0.88496

xf =

0.5	0.83889	0.88496
-----	---------	---------

Ea =

0	40.397	5.2054
---	--------	--------

xf =

0.5	0.83889	0.88496
-----	---------	---------

iter =

0	1	2	3
---	---	---	---

x =

0.88571

xf =

0.5	0.83889	0.88496	0.88571
-----	---------	---------	---------

Ea =

0	40.397	5.2054	0.084972
---	--------	--------	----------

xf =

0.5	0.83889	0.88496	0.88571
-----	---------	---------	---------

iter =

0	1	2	3	4
---	---	---	---	---

x =

0.88571

xf =

0.5	0.83889	0.88496	0.88571	0.88571
-----	---------	---------	---------	---------

Ea =

0	40.397	5.2054	0.084972	2.2247e-05
---	--------	--------	----------	------------

xf =

0.5	0.83889	0.88496	0.88571	0.88571
-----	---------	---------	---------	---------

iter =

0	1	2	3	4	5
---	---	---	---	---	---

x =

0.88571

xf =

0.88571	0.5	0.83889	0.88496	0.88571	0.88571
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Ea =

12	0	40.397	5.2054	0.084972	2.2247e-05	1.5293e-
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ans =

0
1
2

3
4
5

ans =

0.5
0.83889
0.88496
0.88571
0.88571
0.88571

ans =

0
40.397
5.2054
0.084972
2.2247e-05
1.5293e-12

tableau =

0	0.5	0
1	0.83889	40.397
2	0.88496	5.2054
3	0.88571	0.084972
4	0.88571	2.2247e-05
5	0.88571	1.5293e-12