**UMOESSIEN EMEMOBONG DAVID**

**17/ENG01/029**

**CHEMICAL ENGINEERING**

**ASSIGNMENT 1**

commandwindow

clear

clc

syms x

format short g

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

emem = diff(f)

z = f/emem

f =

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

emem =

(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/florence)))

x = double(subs(x - (f/florence)))

x = double(subs(x - (f/florence)))

x = double(subs(x - (f/florence)))

x = double(subs(x - (f/florence)))

x = double(subs(x - (f/florence)))

x = double(subs(x - (f/florence)))

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 =

0.5 0.83889 0.88496 0.88571 0.88571 0.88571

Ea =

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

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