**EVAH OGHENELURE FAVOUR**

**17/ENG01/011**

**CHEMICAL ENGINEERING**

**ASSIGNMENT 2**

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 =

 0.83889

x =

 0.88496

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