**EGBOCHUKWU EBENEZER UZOCHIWARA**

**CHEMICAL ENGINEERING**

**17/ENG01/008**

**ENG382 ASSIGNMENT 2**

* **MATLABCODES:**

commandwindow

clear

clc

syms x

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

err(1)=0;

relerr(1)=0;

tol(1)=0.00000000000000000001;

X(1)=0.5;

gprime=diff(g);

max1=10;

P(1)=1;

for i=2:max1;

 P(i)=i;

 X(i)=(X(i-1))-((subs(g,X(i-1)))/subs(gprime,X(i-1)));

 err(i)=abs(X(i)-X(i-1));

 relerr(i)=(err(i)/X(i))\*100 ;

 if err(i)<tol|relerr<tol,break,end

end

fprintf('Iteration')

fprintf(' X')

fprintf(' Error')

fprintf(' Relative Error')

fprintf('\n')

y=[P',X',err',relerr'];

fprintf('%2.20f %20.20f %10.20f %10.0f\n',y')

**OUTPUT:**

****