clc;clear all;

a=[2 -1 -1 3 ; 6 -2 3 0 ; -4 2 3 -3 ; 2 0 4 -7 ];

b=[9;11;-3;-14];

x1(1)=0; x2(1)=0; x3(1)=0; x4(1)=0;

for k=1:3

x1(k+1)=1/2\*(9+(x2(k))+(x3(k))-(3\*(x4(k))));

x2(k+1)=(-1/2)\*(11-(6\*x1(k))-(3\*(x3(k))));

x3(k+1)=1/3\*(-3+(4\*x1(k))-(2\*x2(k))+(3\*x4(k)));

x4(k+1)=(-1/7)\*(-14-(2\*x1(k))-(4\*x3(k)));

end

for j=4:8

x1(j+1)=x1(j)-(((x1(j)-x1(j-1))^2)/(x1(j)-2\*(x1(j-1))+x1(j-2)));

x2(j+1)=x2(j)-(((x2(j)-x2(j-1))^2)/(x2(j)-2\*(x2(j-1))+x2(j-2)));

x3(j+1)=x3(j)-(((x3(j)-x3(j-1))^2)/(x3(j)-2\*(x3(j-1))+x3(j-2)));

x4(j+1)=x4(j)-(((x4(j)-x4(j-1))^2)/(x4(j)-2\*(x4(j-1))+x4(j-2)));

if (abs(x1(j+1)-x1(j))<=0.0001)

fprintf('max|x1(%d)-x1(%d)|=%.4f\n',j+1,j,abs(x1(j+1)-x1(j)));

break;

elseif (abs(x2(j+1)-x2(j))<=0.0001)

fprintf('max|x2(%d)-x2(%d)|=%.4f\n',j+1,j,abs(x2(j+1)-x2(j)));

break;

elseif (abs(x3(j+1)-x3(j))<=0.0001)

fprintf('max|x3(%d)-x3(%d)|=%.4f\n',j+1,j,abs(x3(j+1)-x3(j)));

break;

elseif (abs(x4(j+1)-x4(j))<=0.0001)

fprintf('max|x4(%d)-x4(%d)|=%.4f\n',j+1,j,abs(x4(j+1)-x4(j)));

break;

end

end

e=[x1(1) x2(1) x3(1) x4(1); x1(2) x2(2) x3(2) x4(2) ; x1(3) x2(3) x3(3) x4(3) ; x1(4) x2(4) x3(4) x4(4); x1(5) x2(5) x3(5) x4(5); x1(6) x2(6) x3(6) x4(6); x1(7) x2(7) x3(7) x4(7);x1(8) x2(8) x3(8) x4(8)]