

```

%% Barnsley fern
clear;
T1=[0.85,0.04;-0.04,0.85];
T2=[-0.15,0.28;0.26,0.24];
T3=[0.2,-0.26;0.23,0.22];
T4=[0,0;0,0.16];
Q1=[0;1.64];
Q2=[-0.028;1.05];
Q3=[0;1.6];
Q4=[0,0];
P1=0.85;
P2=0.07;
P3=0.07;
P4=0.01;
Num=15000;
x(:,1)=rand(2,1);
plot(x(1,:),x(2,:),'b.')
axis equal;
hold on;
for j=1:Num
r=rand;
if r<=P1
x(:,j+1)=T1*x(:,j)+Q1;
elseif r<=P1+P2
x(:,j+1)=T2*x(:,j)+Q2;
elseif r<=P1+P2+P3
x(:,j+1)=T3*x(:,j)+Q3;
else
x(:,j+1)=T4*x(:,j);
end
end
plot(x(1,:),x(2,:),'b.');
hold off;

```

