t=0:1:200;

size\_vector=size(t,2);

S=zeros(1,size\_vector);

I=zeros(1,size\_vector);

R=zeros(1,size\_vector);

N=1;

S(1)=0.9999;

I(1)=1-S(1)

R(1)=0;

beta=0.25;

gama=0.1;

data = zeros(201,6)

data(1,:) = [0,beta,gama,S(1),I(1),R(1)]

for i=1:200

S(i+1)=S(i)-beta/N\*S(i)\*I(i);

I(i+1)=I(i)+(beta/N\*S(i)\*I(i)-gama\*I(i));

R(i+1)=R(i)+gama\*I(i);

data1period=[i,beta,gama,S(i+1),I(i+1),R(i+1)]

data(i+1,:)=[data1period]

end

plot(t,R,'b',t,I,'r',t,S,'g')

xlswrite('data.xlsx',data,4)