```
clc

beta = 0.99;
alpha = 0.36;
delta = 0.025;

rho = 0.95;
sigmae = 0.007;
mu = 0;

kpoints = 501;

kstat = ((1-beta*(1-delta)) / (beta*alpha)) ^ (1 /(alpha-1));
cstat = kstat^alpha - delta*kstat;
klow = 0.8* kstat;
khigh = 1.2 * kstat;

increment = (khigh - klow) / (kpoints - 1);
kapital = klow:increment:khigh;
kapital = kapital';

zpoints = 9;
multiple = 3;

[z, zprob]= tauchen(zpoints,mu,rho,sigmae,multiple);
shock = exp(z);

inv = kapital * ones(1,kpoints);
k = ones(kpoints,1) * kapital';

for p=1:zpoints
    c(:,:,p) = shock(p) * k .^ alpha - inv + (1-delta) * k;
end;

u = log(c);
neg_c = find(c<0);
u(neg_c)= -1e10;

tolerance = 1e-4;

```

```
value = log(cstat)*ones(kpoints,zpoints) /(1-beta);
comparison = ones(kpoints,zpoints);

while max(abs(comparison)) > tolerance

    Evalue = value * zprob';

    for m=1:zpoints
        W(:,:,m) = u(:,:,m) + beta * Evalue(:,m)*ones(1,kpoints);
    end;

    [Tvalue1,Tpolicy1] = max(W);
    Tvalue(:,:) = Tvalue1(1,:,:);
    Tpolicy(:,:) = Tpolicy1(1,:,:);

    comparison = Tvalue - value;

    value = Tvalue;
    policy = Tpolicy;
end;

periods = 1000;
s0 = 1;
[chain,state] = markov(T,periodes+1,s0,z');

[unused, zind] = max(state);

kind(1) = (kpoints+1)/2;
ksim(1) = kapital(kind(1));

for i=2:periods+1
    kind(i) = policy(kind(i-1),zind(i-1));
    ksim(i) = kapital(kind(i));
end

ysim = exp(z(zind)) * ksim .^ alpha;
csim = ysim - invsim;
for i=1:periods
    invsim(i)= ksim(i+1) - (1-delta) * ksim(i);
end
```

```
81
82 figure(1)
83 plot(ysim);
84 xlabel('periods')
85 ylabel('output')
86
87 figure(2)
88 plot(csim);
89 xlabel('periods')
90 ylabel('consumption')
91
92 figure(3)
93 plot(invsim);
94 xlabel('periodes')
95 ylabel('investment')
```