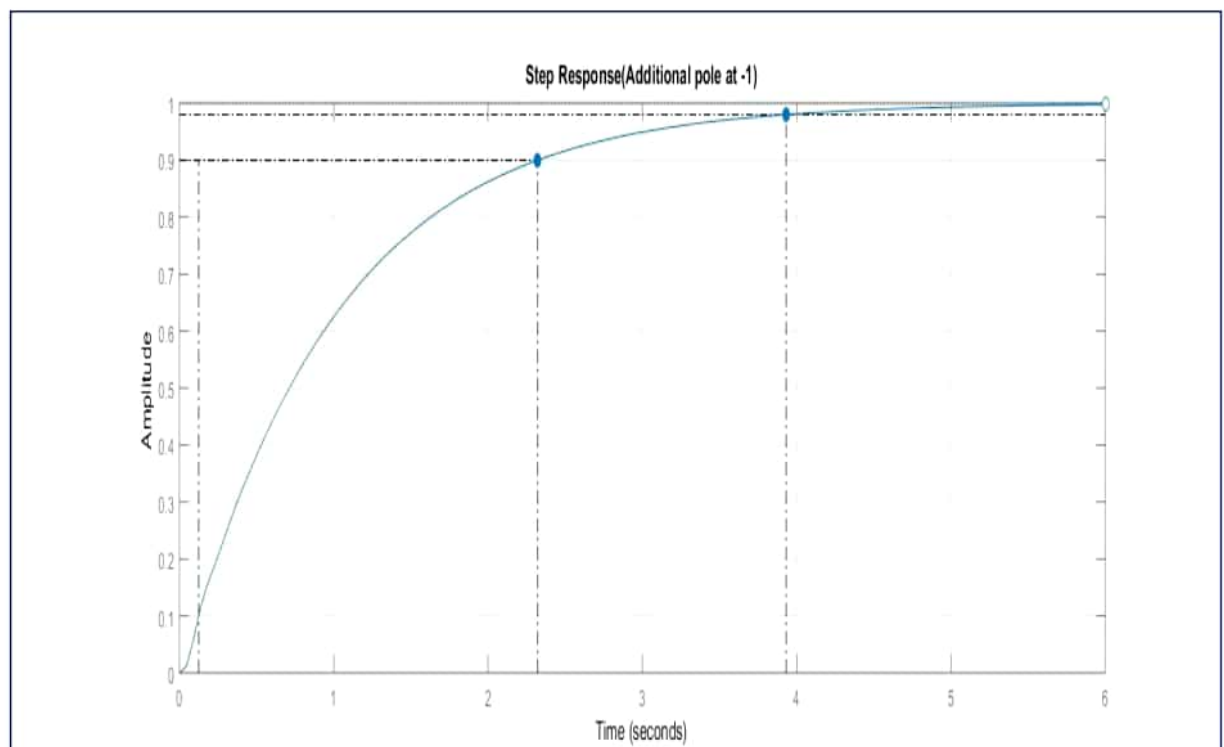
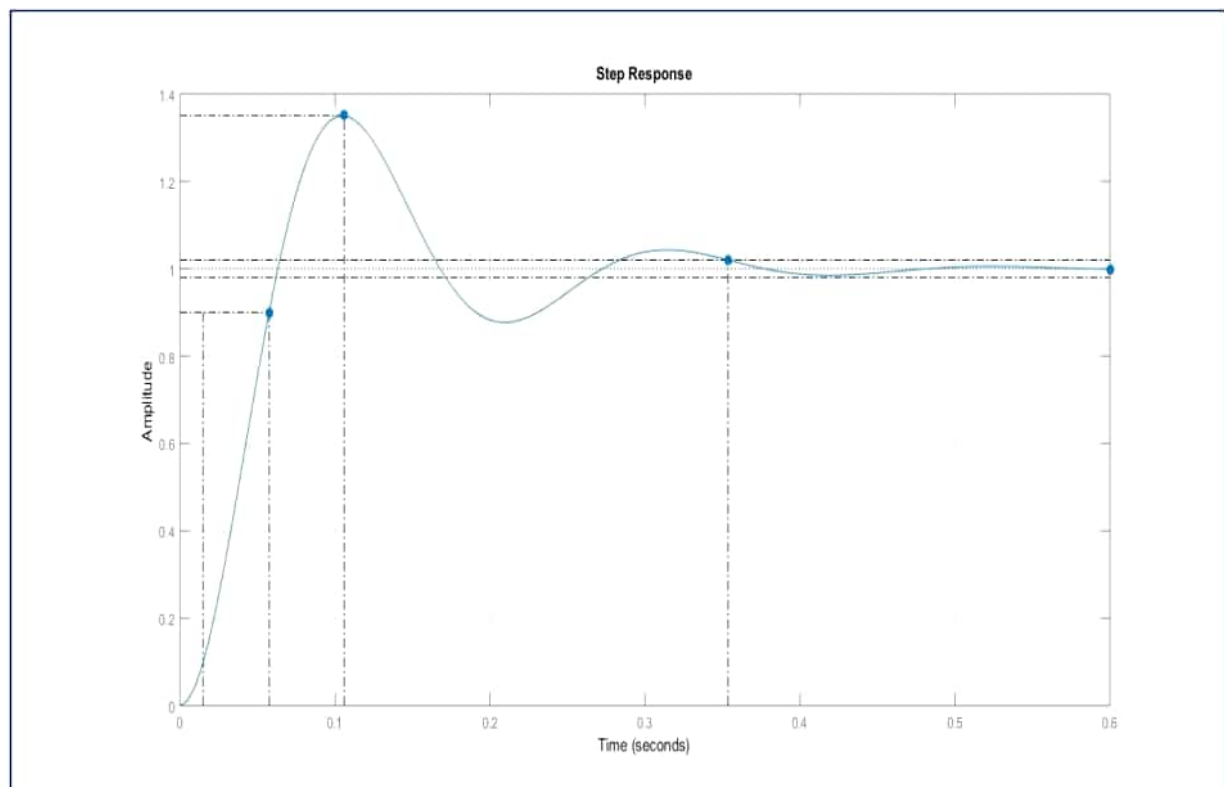
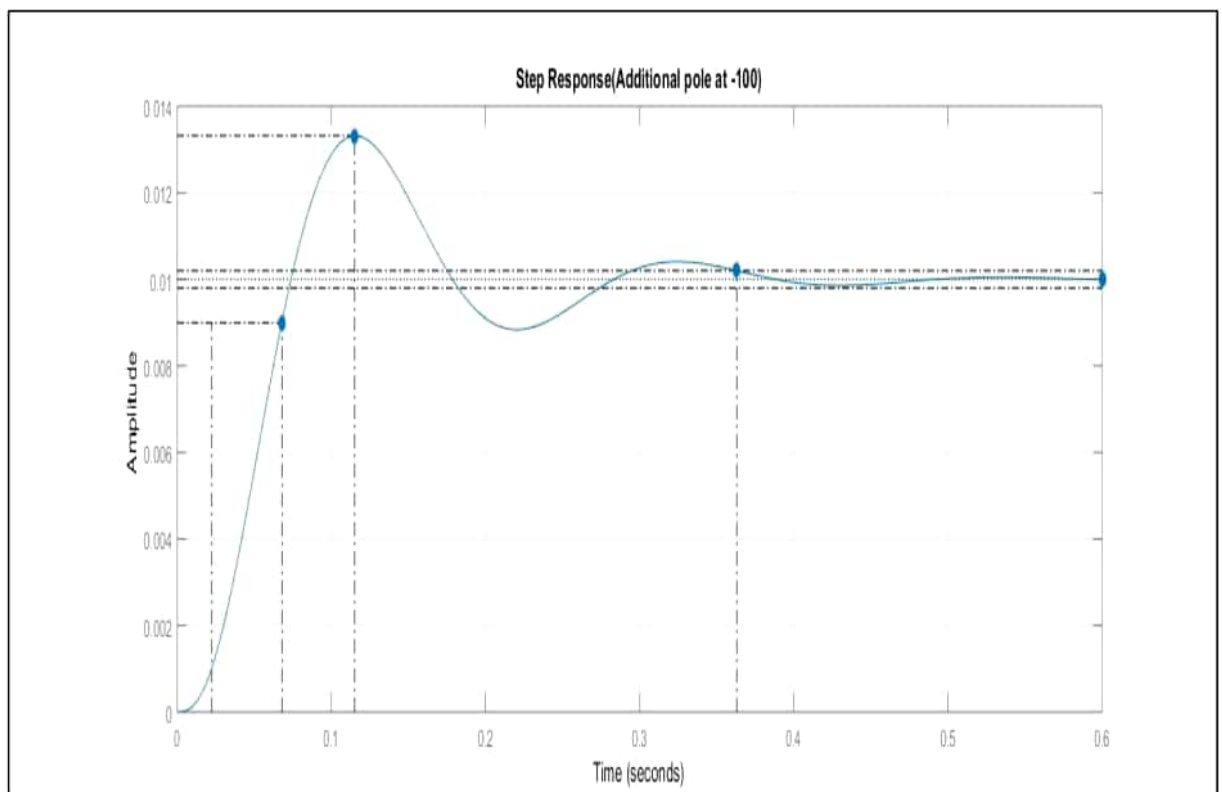
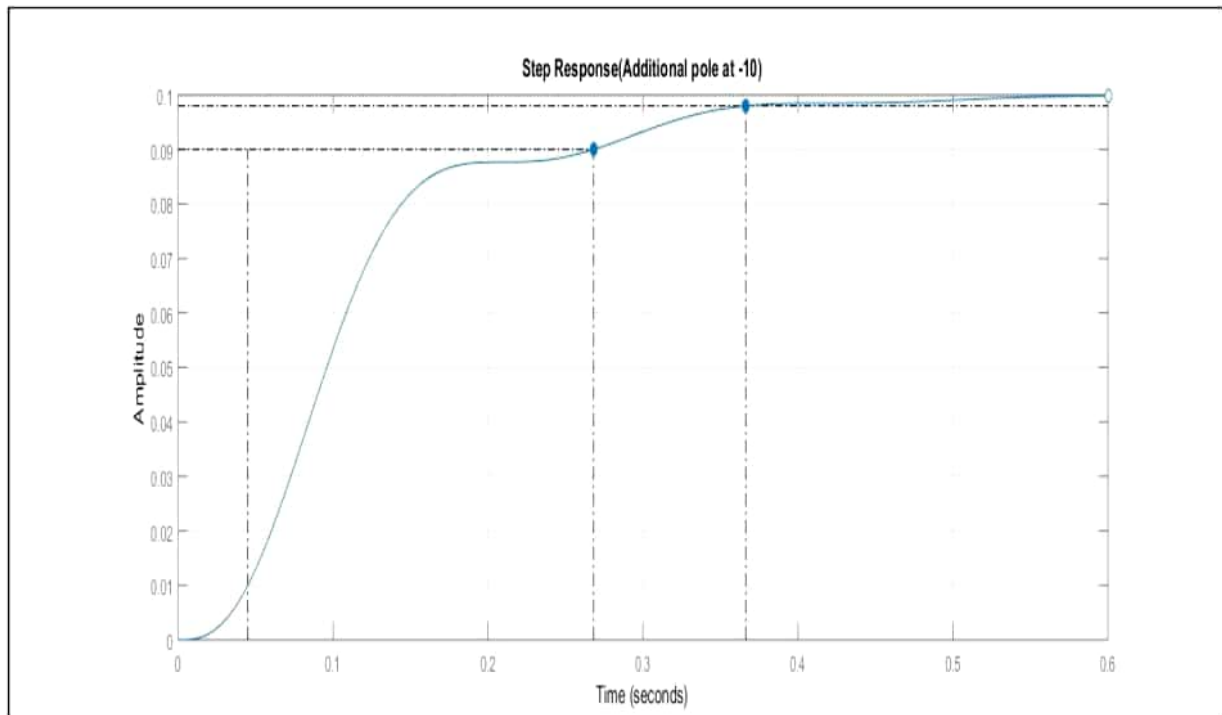


```

%% Time Response of Second order system
z=[];
p=[-10+30i -10-30i];
k=1000;
G=zpk(z,p,k)
figure(3);
step(G)
%% Addition of Pole at -1
z=[];
p=[-10+30i -10-30i -1];
k=1000;
G=zpk(z,p,k)
figure(4);
step(G)
%% Addition of Pole at -10
z=[];
p=[-10+30i -10-30i -10];
k=1000;
G=zpk(z,p,k)
figure(5);
step(G)
%% Addition of Pole at -100
z=[];
p=[-10+30i -10-30i -100];
k=1000;
G=zpk(z,p,k)
figure(6);
step(G)

```

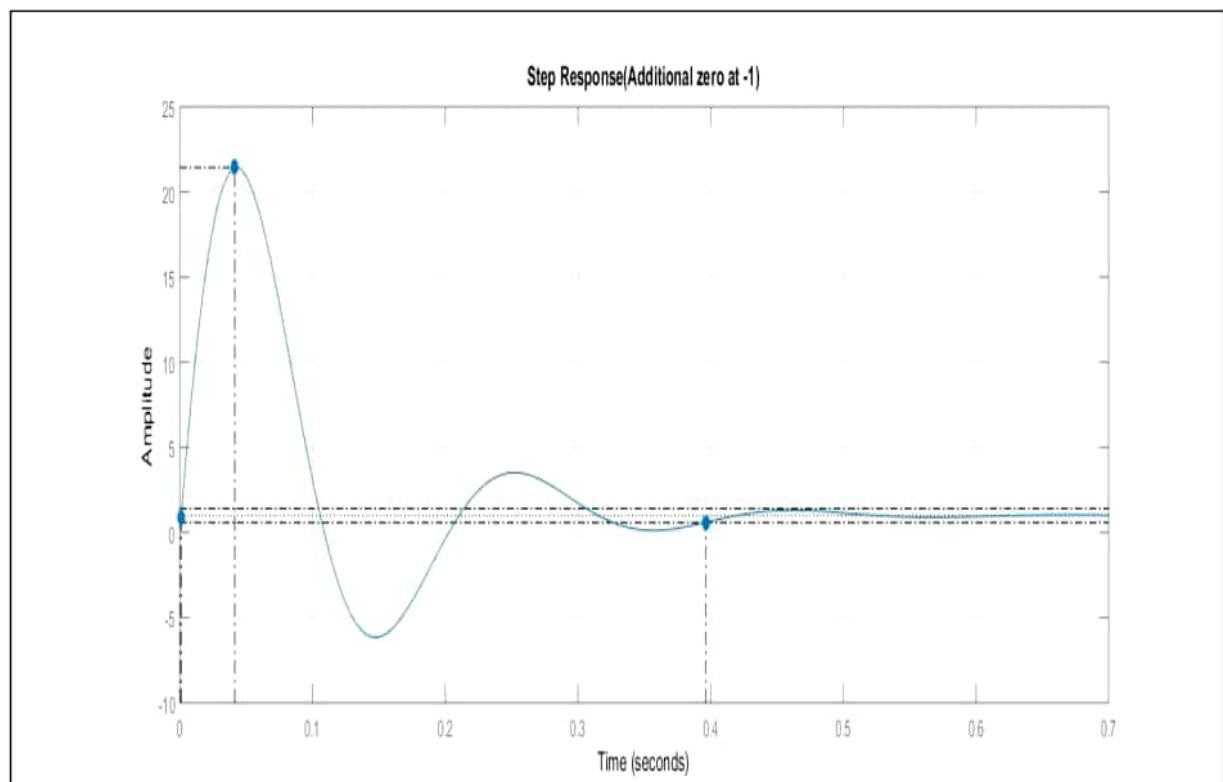
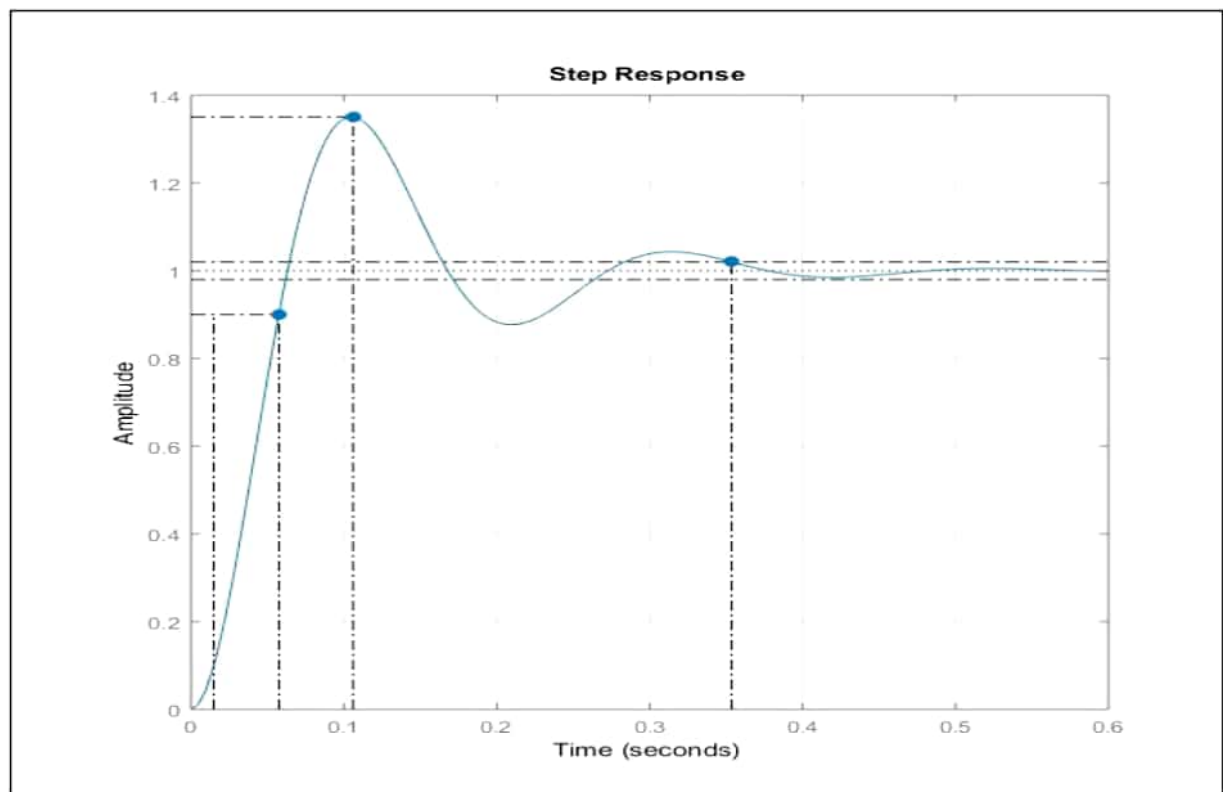


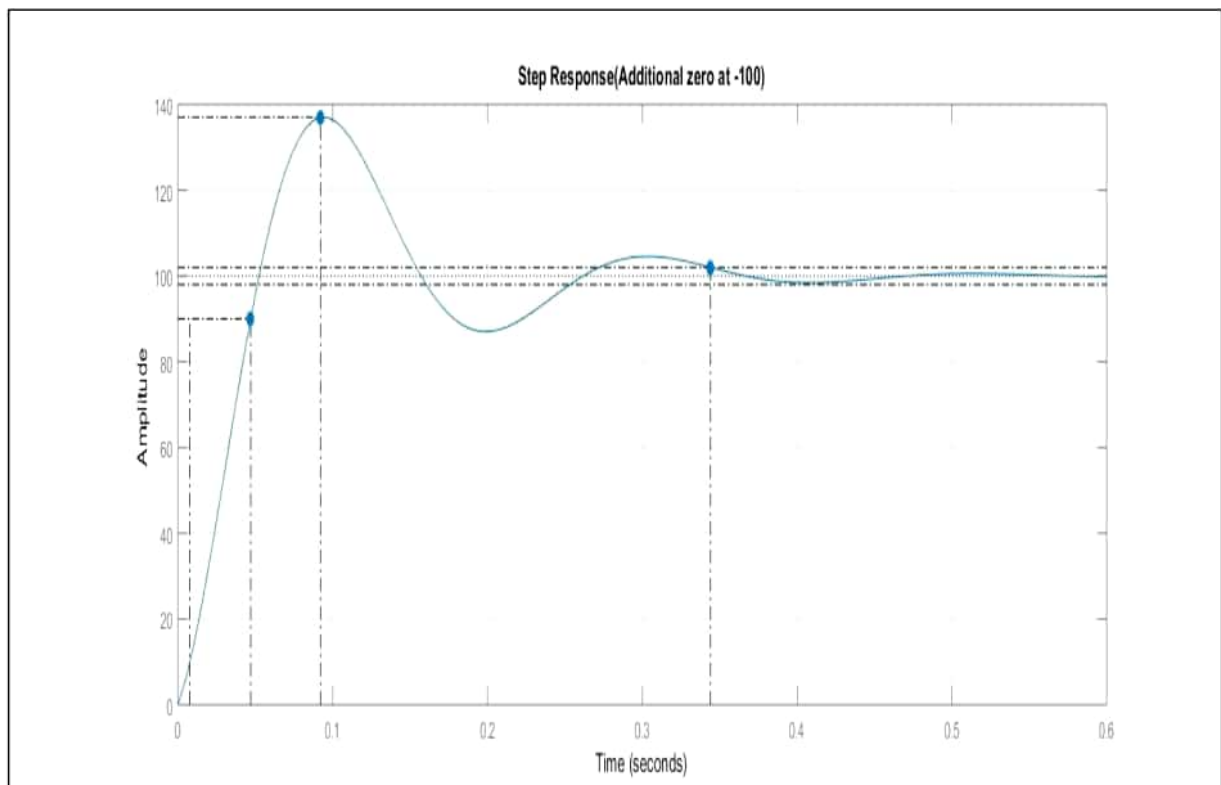
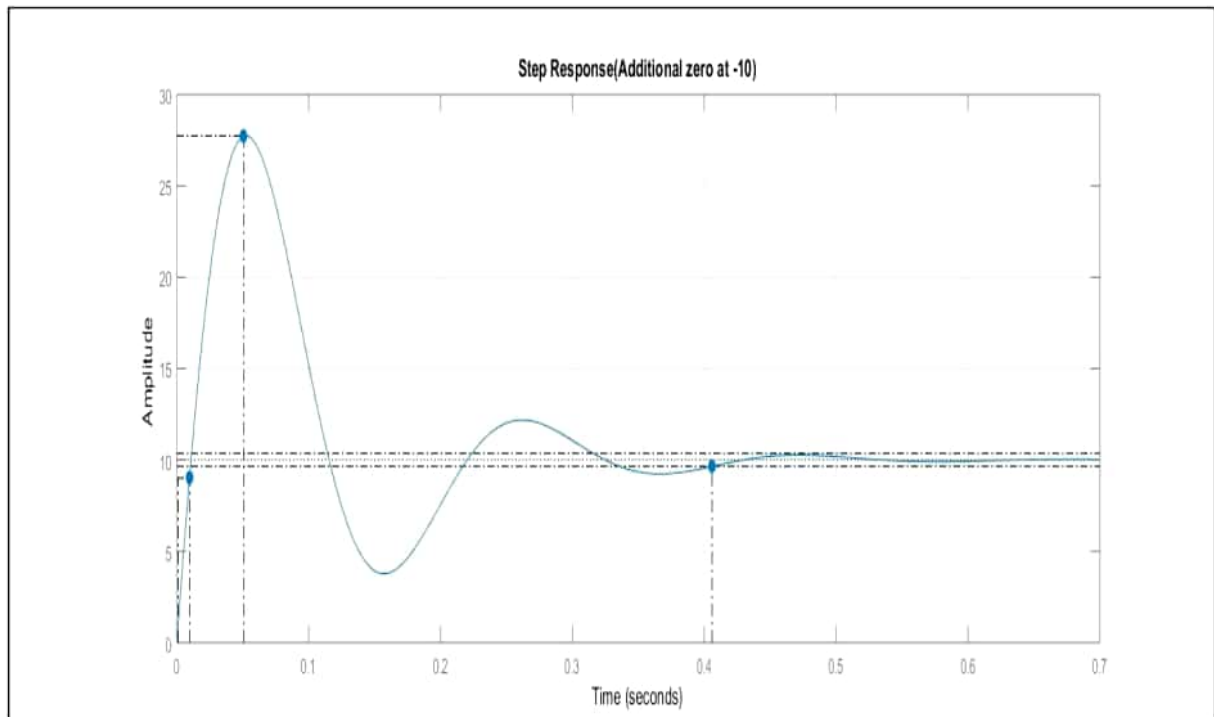


```

%% Time Response of Second order system
z=[];
p=[-10+30i -10-30i];
k=1000;
G=zpk(z,p,k)
figure(3);
step(G)
%% Addition of zero at -1
z=[-1];
p=[-10+30i -10-30i];
k=1000;
G=zpk(z,p,k)
figure(4);
step(G)
%% Addition of zero at -10
z=[-10];
p=[-10+30i -10-30i];
k=1000;
G=zpk(z,p,k)
figure(5);
step(G)
%% Addition of zero at -100
z=[-100];
p=[-10+30i -10-30i];
k=1000;
G=zpk(z,p,k)
figure(6);
step(G)

```





```
%%effect of loop gain of a negative  
feedback system on stability
```

```
z=[]  
p=[-0.5+i -0.5-i -1];  
k1=1;  
k2=2;  
k3=3;  
G1=zpk(z,p,k1)  
G2=zpk(z,p,k2)  
G3=zpk(z,p,k3)  
t=[0:0.01:20];  
[y1,t]=step(G1,t)  
[y2,t]=step(G2,t)  
[y3,t]=step(G3,t)  
figure(1)  
plot(t,y1,t,y2,t,y3)  
legend('k=1', 'k=2', 'k=3')  
grid
```

