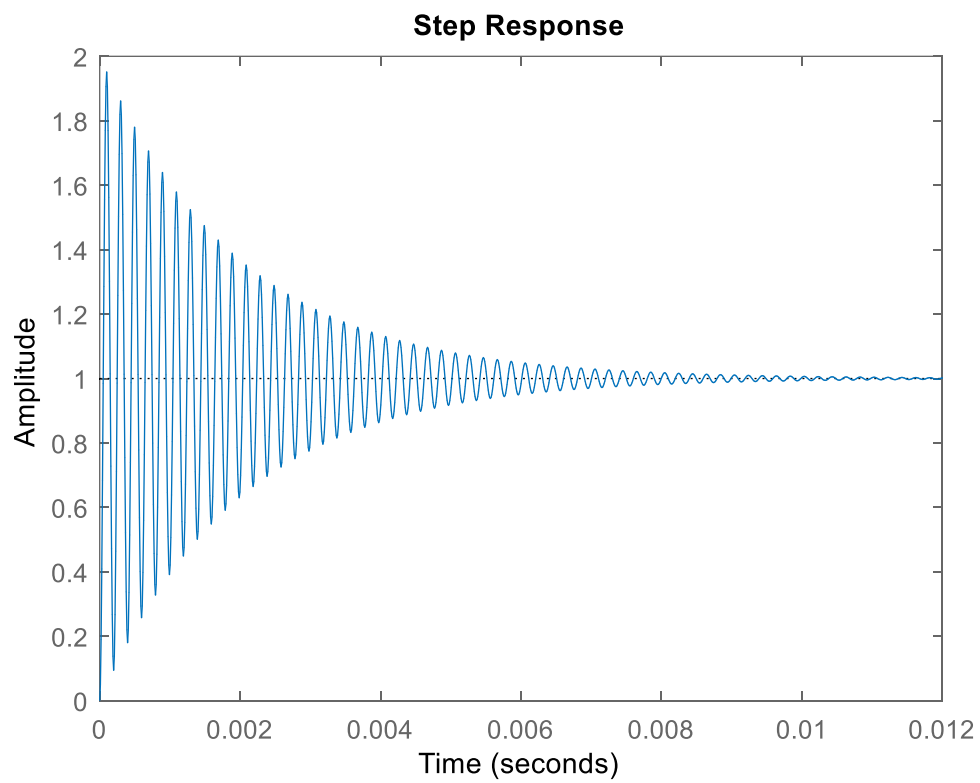


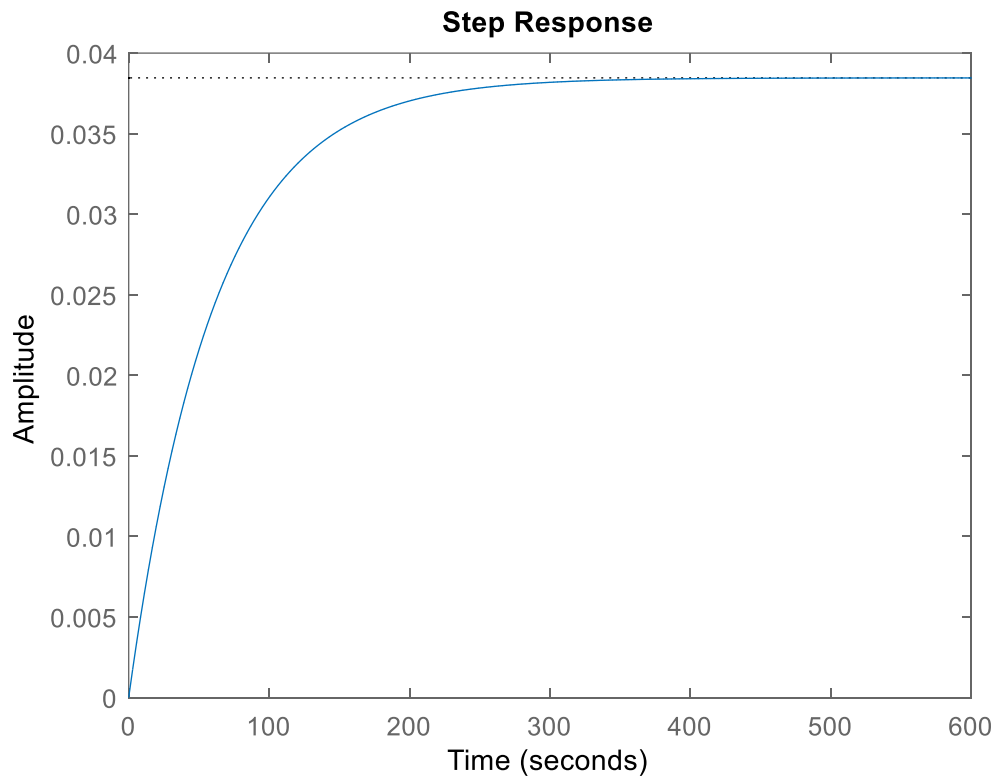
Act#1

```
r=1e3;  
c=1e-6;  
l=1e-3;  
num=[1];  
denum=[l*c (l/r) 1];  
sys=tf(num,denum)  
step(sys)
```



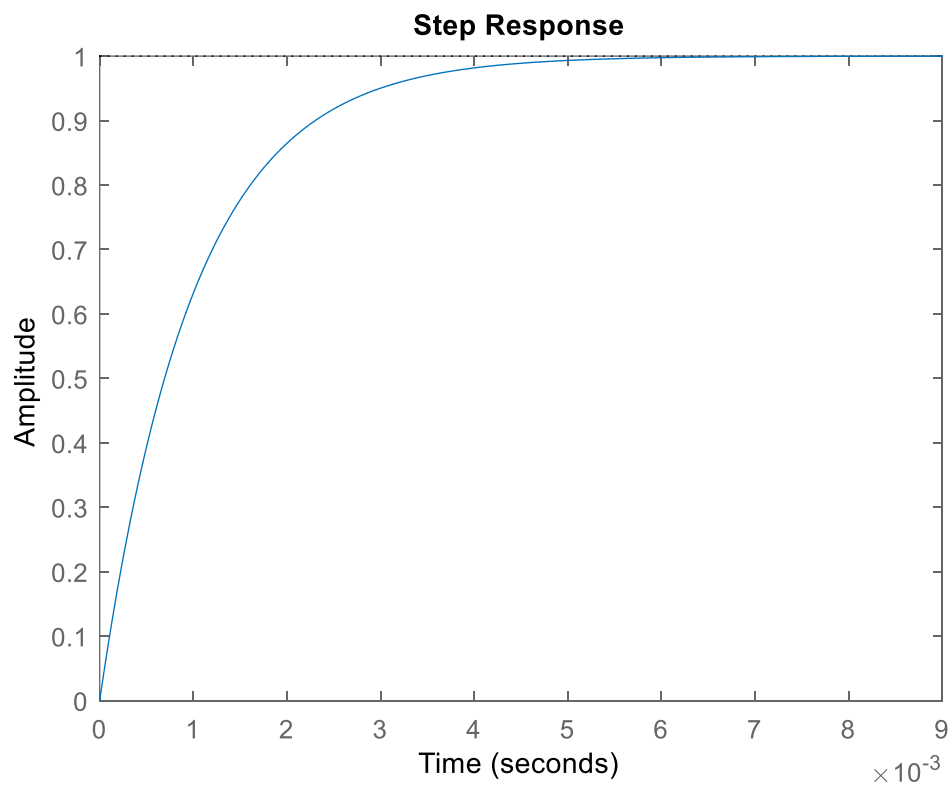
Act#2

```
m=1580;  
b=26;  
num=[1];  
denum=[m b];  
sys=tf(num,denum)  
step(sys)
```



ACT#3

```
r=1e3;  
c=1e-6;  
num=[0 1];  
denum=[r*c 1];  
sys=tf(num,denum)  
step(sys)
```



Act#1

```
clear all
num=[25];
den=[1 10 25];
system=tf(num,den);
step(system)
stepinfo(system)
```

struct with fields:

RiseTime: 0.6717

SettlingTime: 1.1668

SettlingMin: 0.9008

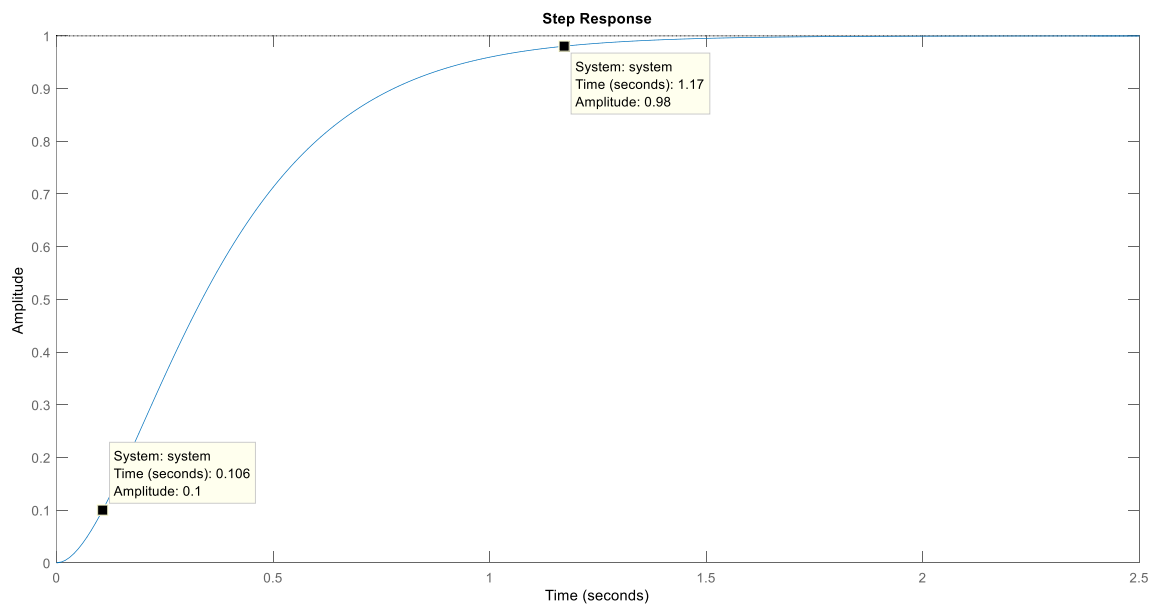
SettlingMax: 0.9999

Overshoot: 0

Undershoot: 0

Peak: 0.9999

PeakTime: 2.390



Act#2

```
num=[500];  
den=[1 14.14 100];  
system=tf(num,den);  
step(system)  
stepinfo(system)
```

struct with fields:

RiseTime: 0.2149

SettlingTime: 0.5963

SettlingMin: 4.5179

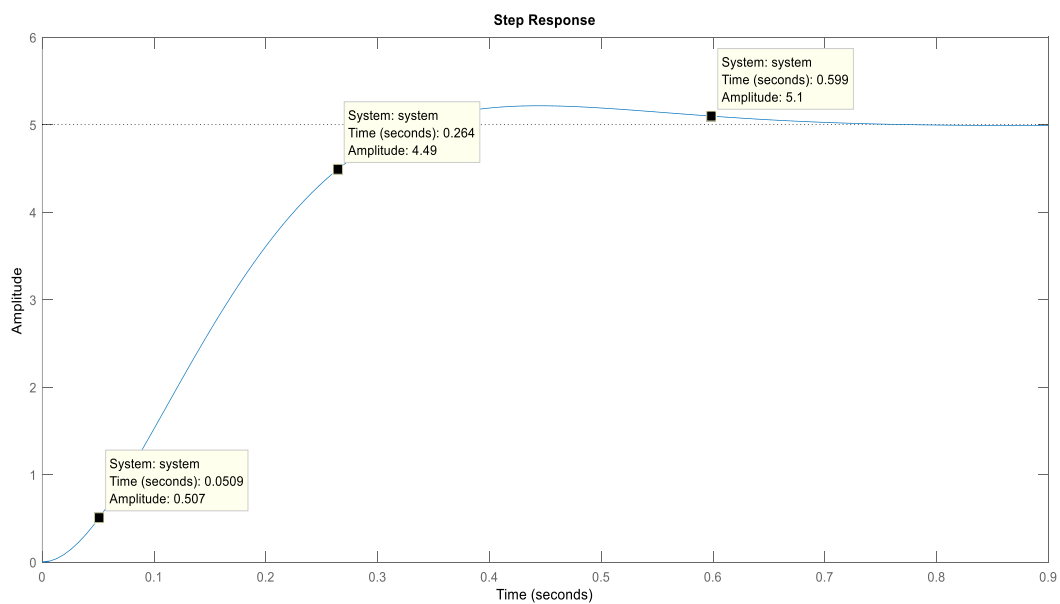
SettlingMax: 5.2163

Overshoot: 4.3251

Undershoot: 0

Peak: 5.2163

PeakTime: 0.4429

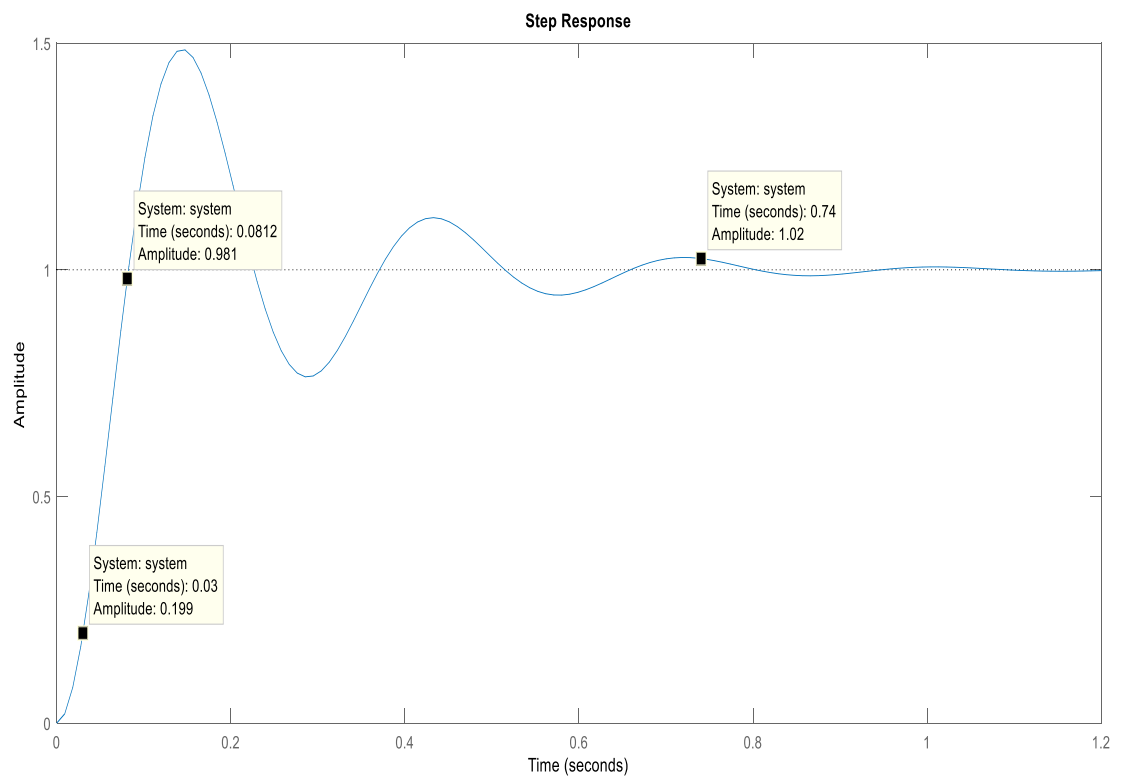


Act#3

```
num=[500];  
den=[1 10 500];  
system=tf(num,den);  
step(system)  
stepinfo(system)
```

struct with fields:

```
RiseTime: 0.0553  
SettlingTime: 0.7561  
SettlingMin: 0.7639  
SettlingMax: 1.4852  
Overshoot: 48.5150  
Undershoot: 0  
Peak: 1.4852  
PeakTime: 0.1474
```



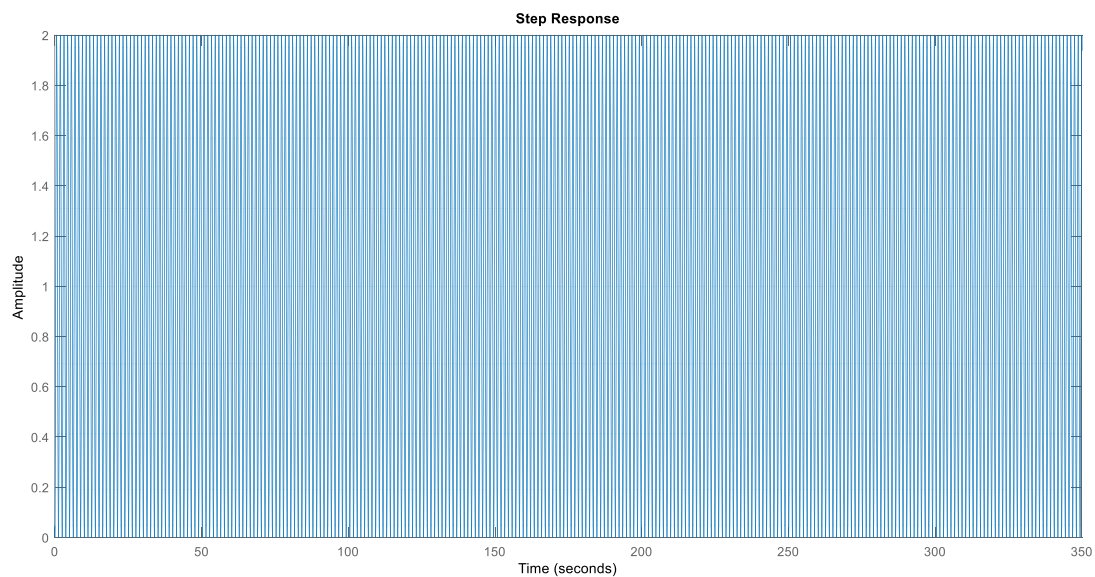
Act#4

```
num=[0 0 25];  
den=[1 0 25];  
system=tf(num,den)  
step(system)  
stepinfo(system)
```

```
system =  
  
      25  
-----  
      s^2 + 25
```

Continuous-time transfer function.

```
ans =  
  
struct with fields:  
  
    RiseTime: NaN  
    SettlingTime: NaN  
    SettlingMin: NaN  
    SettlingMax: NaN  
    Overshoot: NaN  
    Undershoot: NaN  
    Peak: Inf  
    PeakTime: Inf
```



Act#5

```
num=[0 100 0];  
den=[1 0 -25];  
system=tf(num,den)  
step(system)  
stepinfo(system)
```

100 s

$s^2 - 25$

Continuous-time transfer function.

ans =

struct with fields:

RiseTime: NaN

SettlingTime: NaN

SettlingMin: NaN

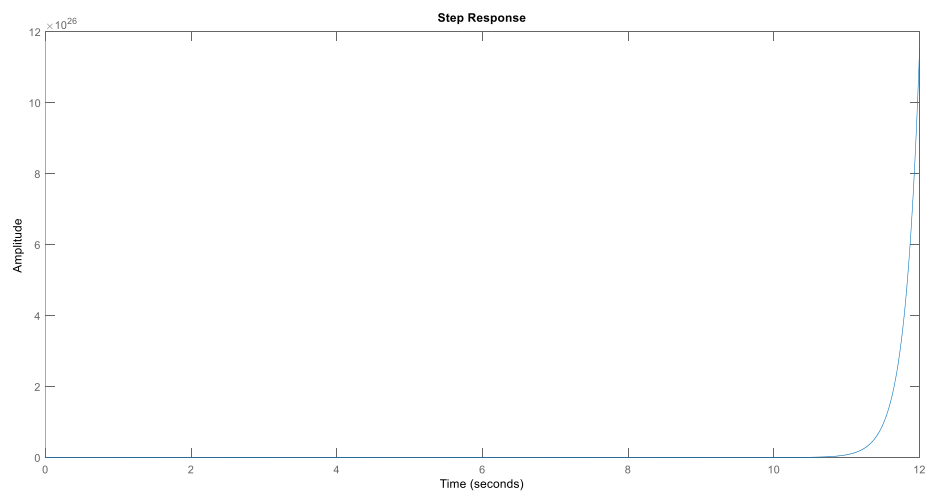
SettlingMax: NaN

Overshoot: NaN

Undershoot: NaN

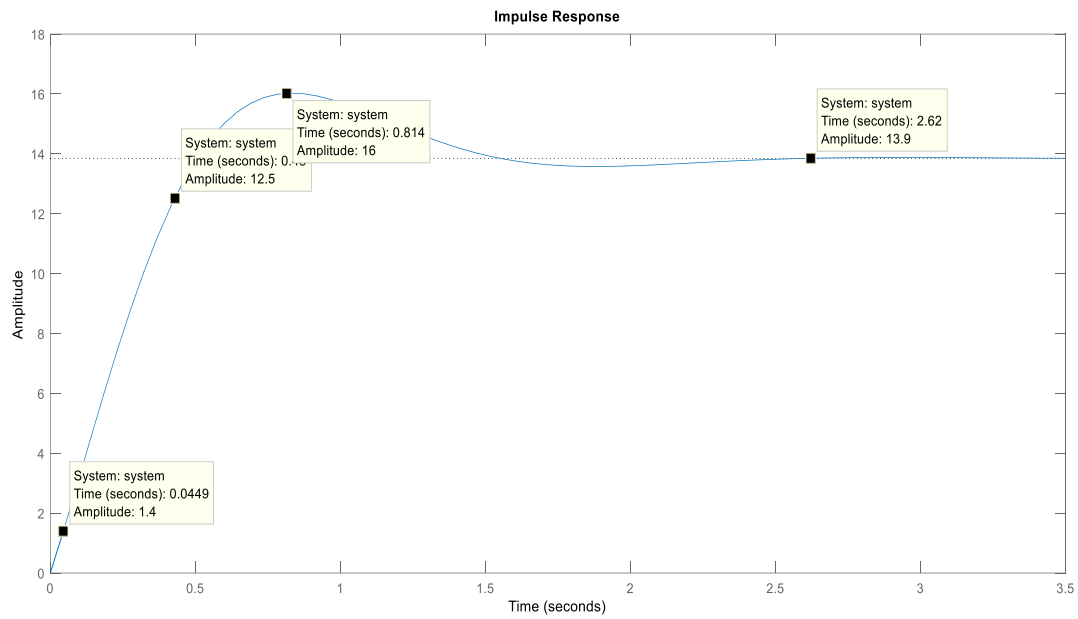
Peak: Inf

PeakTime: Inf



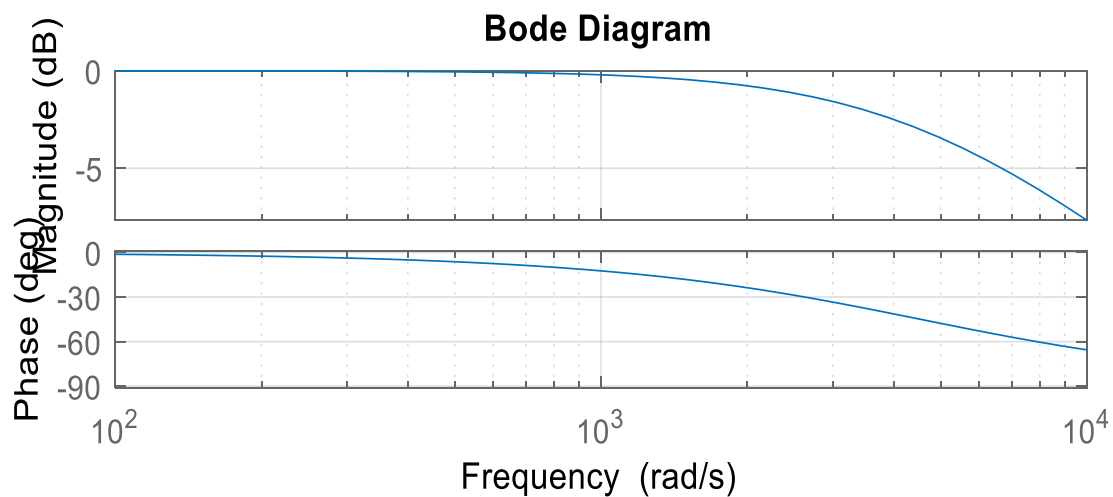
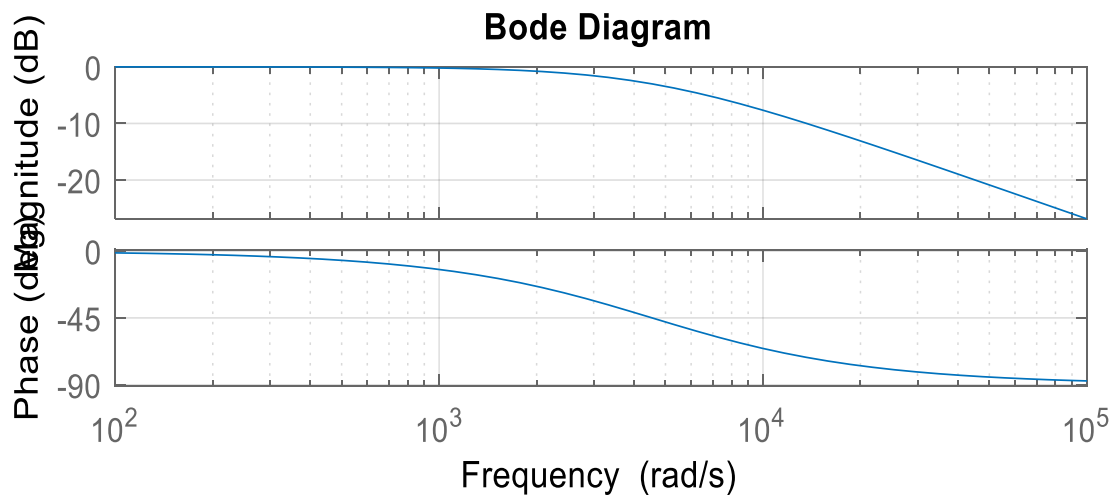
Act#6

```
num=[0 0 30 180];  
den=[1 4 13 0];  
system=tf(num,den);  
impz(system);  
stepinfo(system);
```



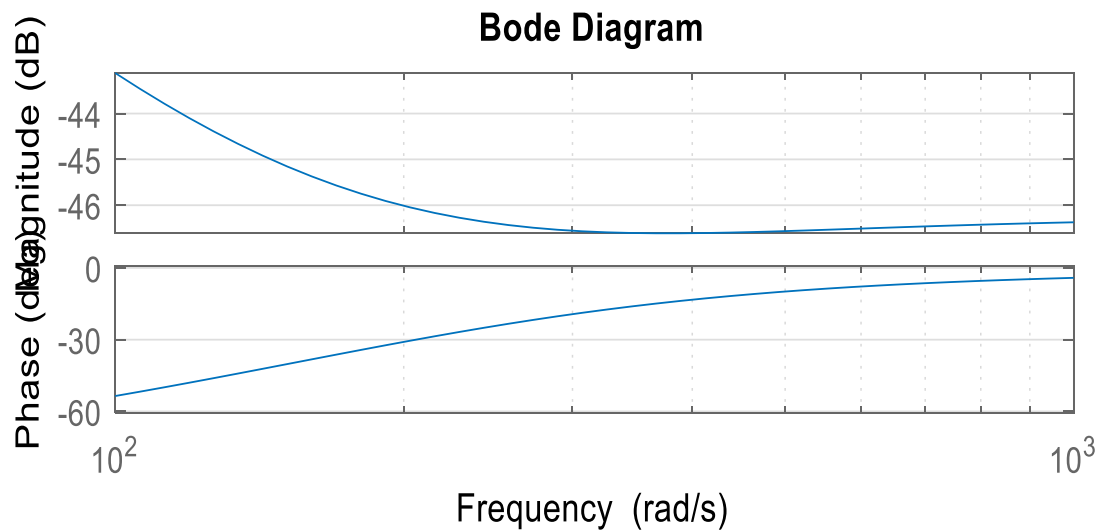
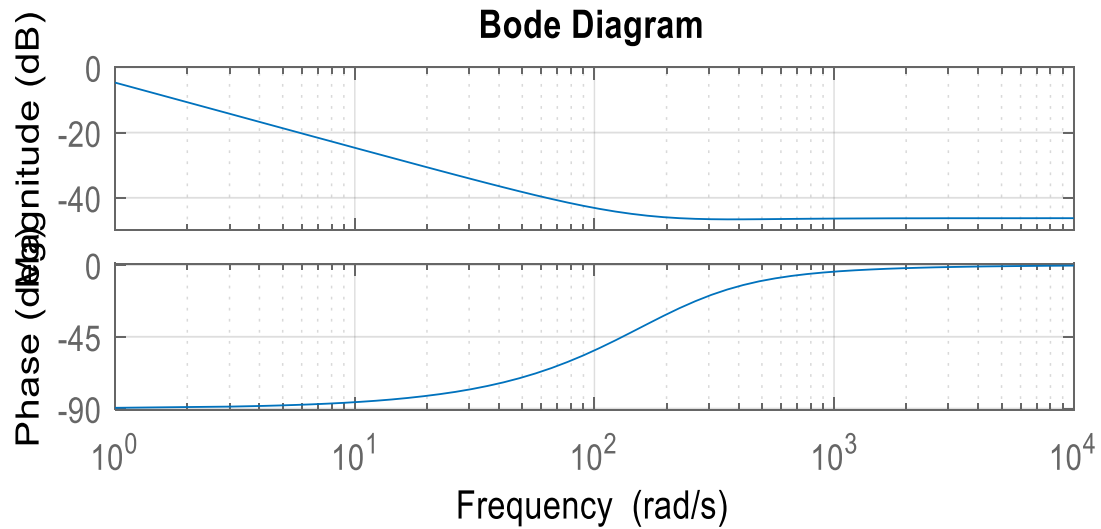
Act#1

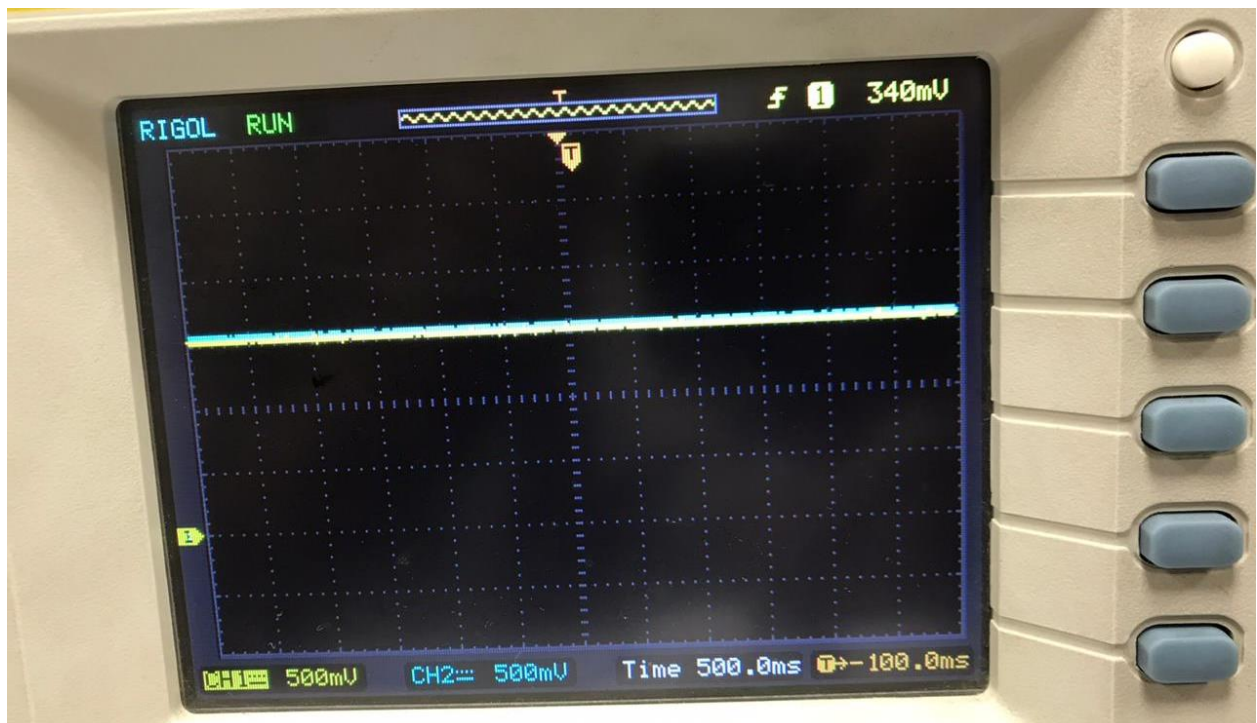
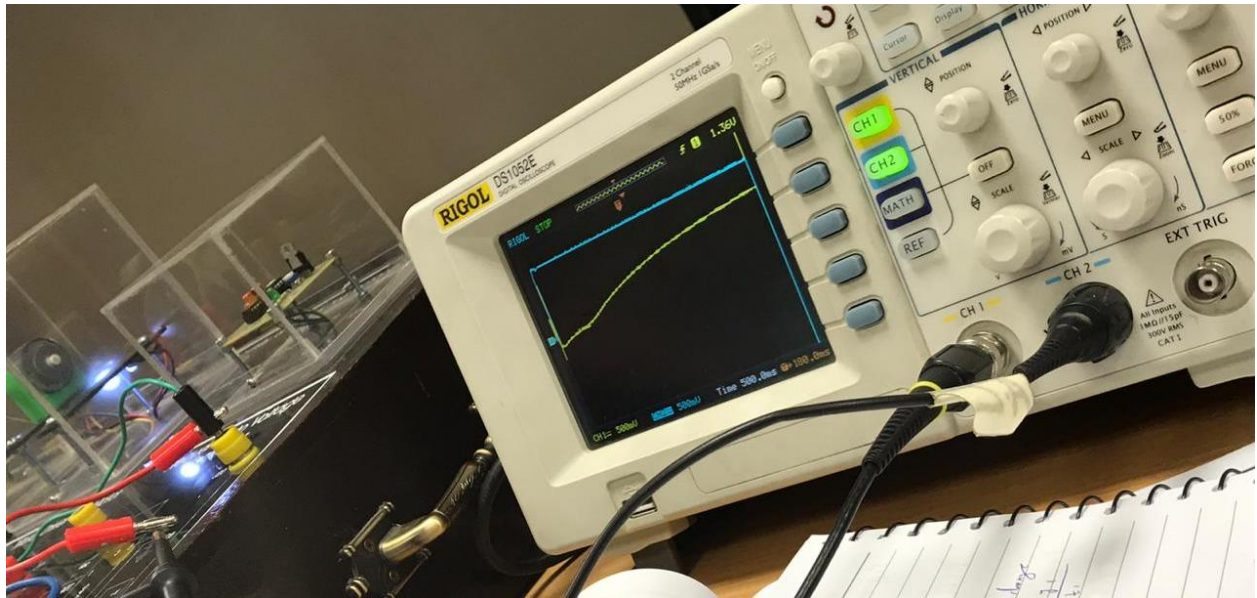
```
close all
clear all
r=220;
c=1e-6;
num=[0 1];
den=[r*c 1];
sys=tf(num,den)
fc=(1/(2*pi*r*c))*(2*pi)
[mag,phase] = bode(sys,fc)
[mag,phase] = bode(sys,[1e6 400e3 100e3 30e3 10e3])
subplot(2,1,1)
bode(sys),grid on
subplot(2,1,2)
bode(sys,{1e2 1e4}),grid on
```

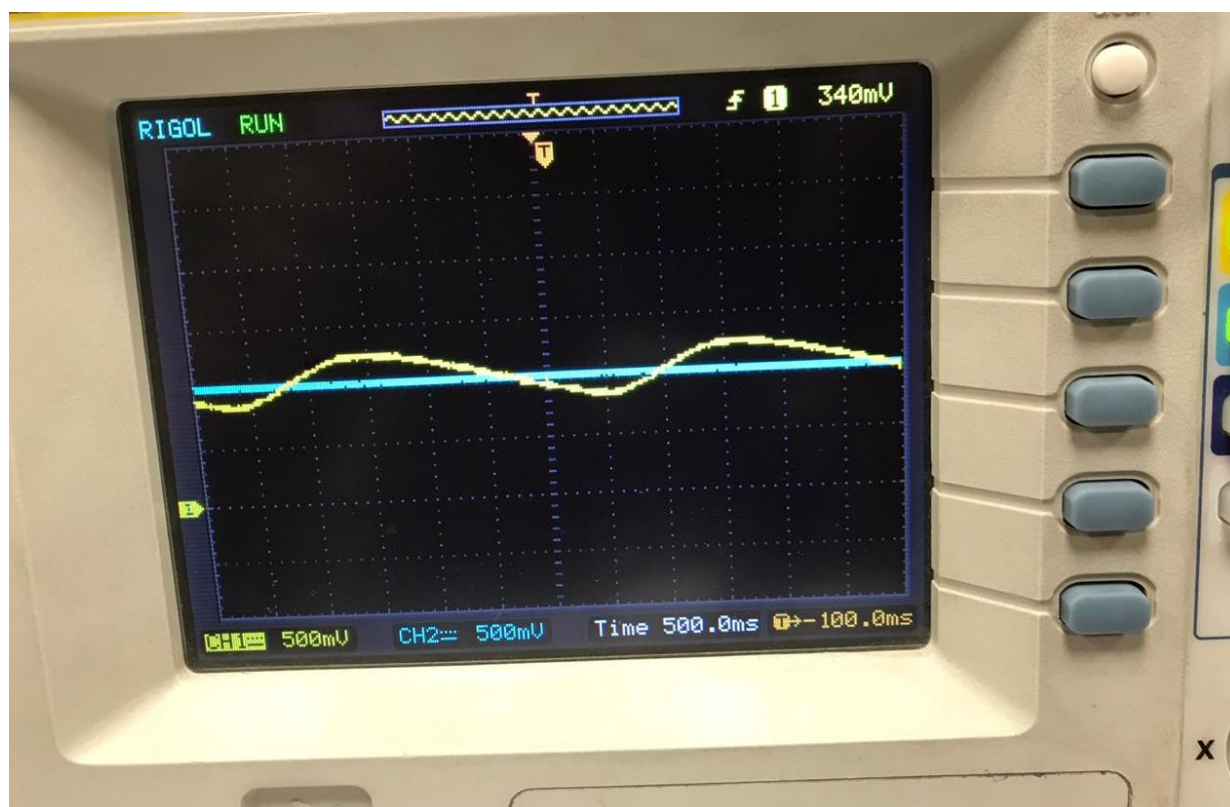
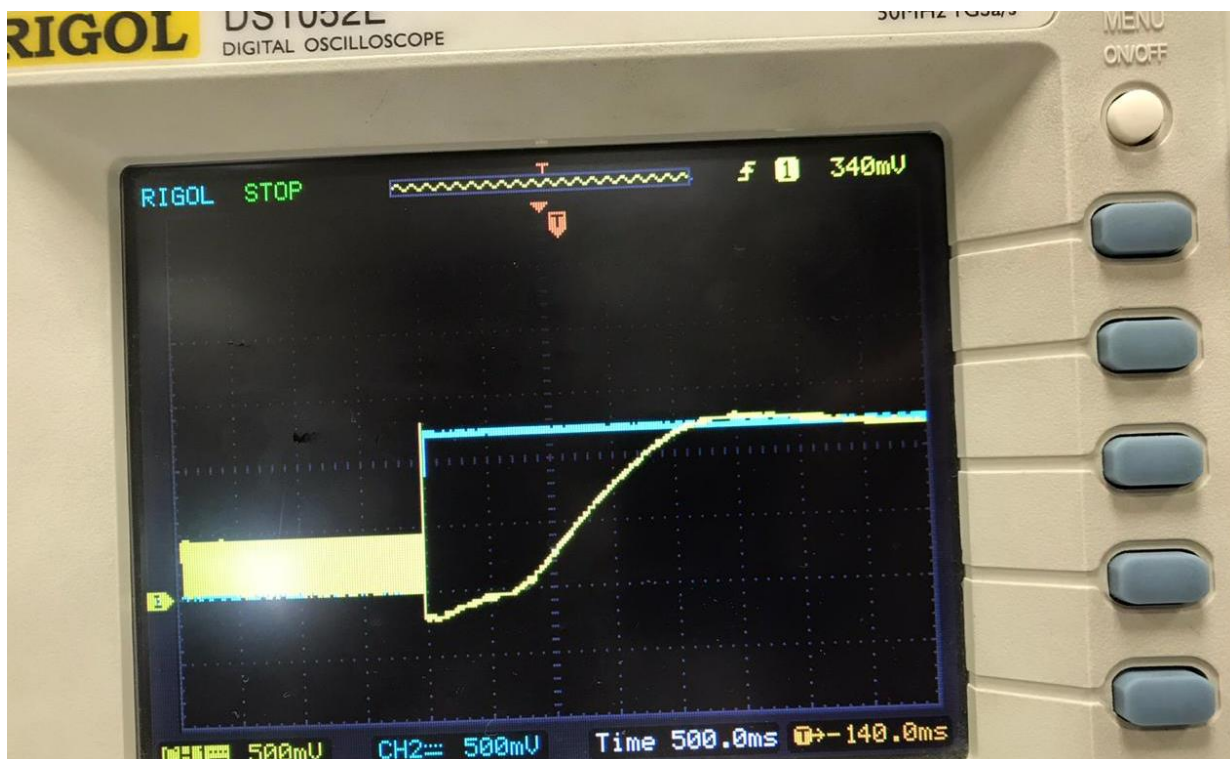


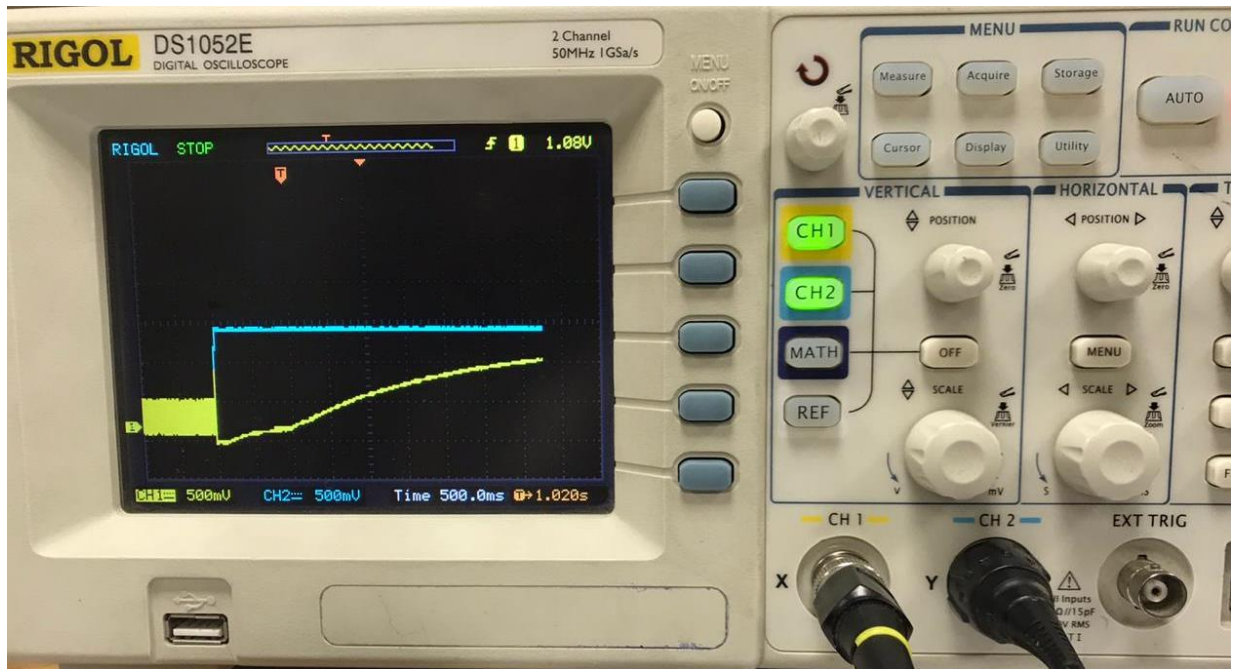
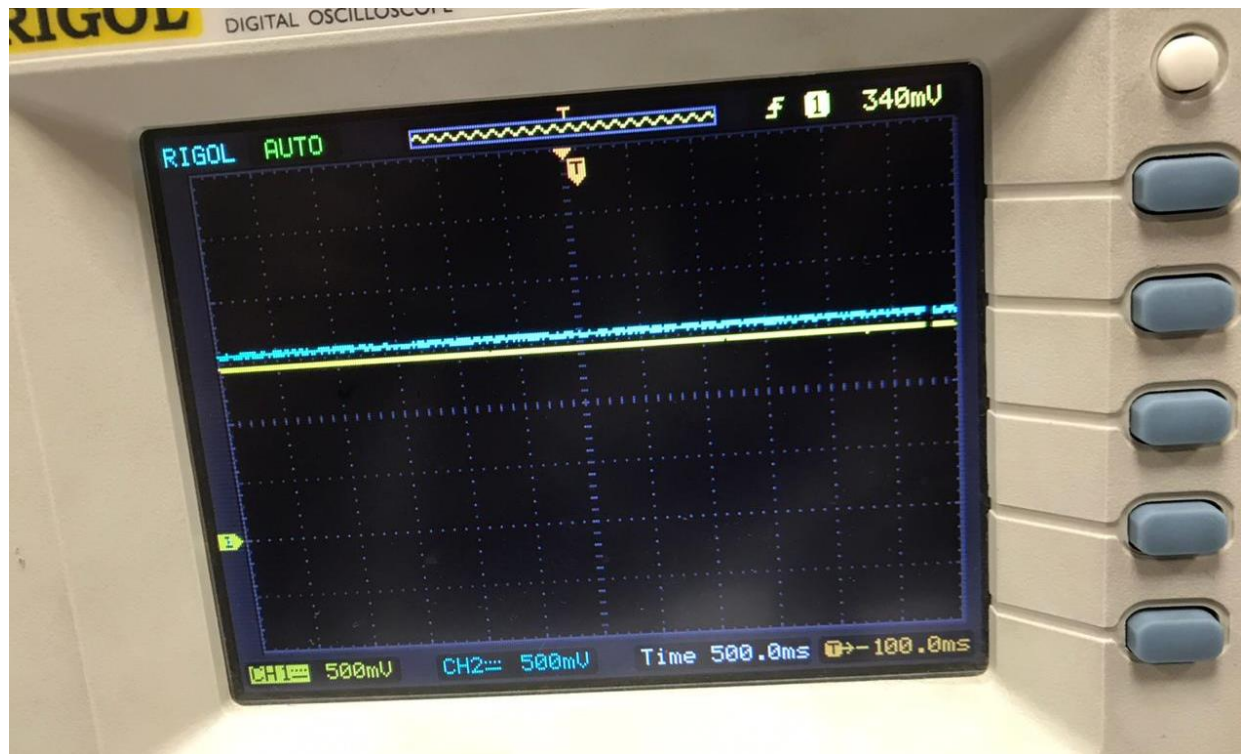
Act#2

```
close all
clear all
r=220;
c=1e6;
num=[0.004867 1.947 194.7];
den=[1 333.7 0.32];
sys=tf(num,den)
fc=(1/(2*pi*r*c))*(2*pi)
[mag,phase] = bode(sys,fc)
[mag,phase] = bode(sys,[0.024492 0.463464 6.60656 94.252124 7023.623])
subplot(2,1,1)
bode(sys),grid on
subplot(2,1,2)
bode(sys,{1e2 1e3}),grid on`
```









```

close all
clear all
m=2;
b=-1;
k=3;
num=[1];
denum=[m b k];
sys=tf(num,denum)
roots(denum)

```

$$sys = \frac{1}{2s^2 - s + 3}$$

Continuous-time transfer function.

ans =

-0.2500 + 1.1990i

-0.2500 - 1.1990i

>> Untitled

$$sys = \frac{1}{2s^2 - s + 3}$$

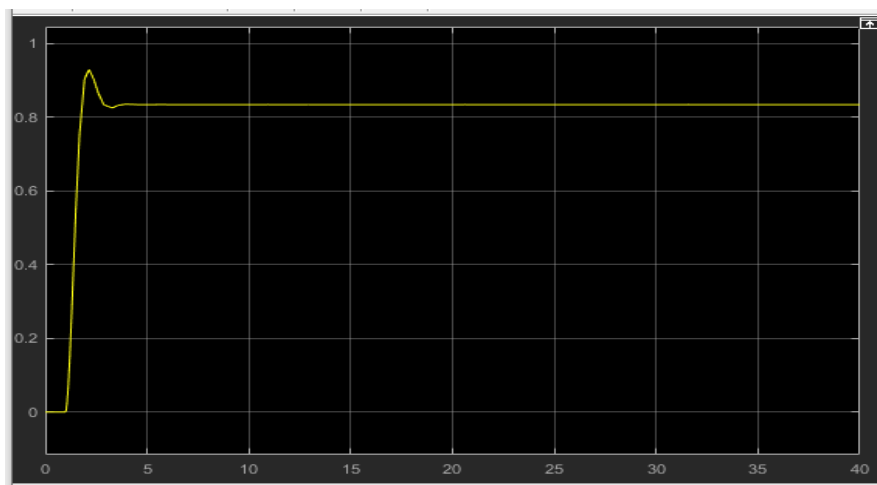
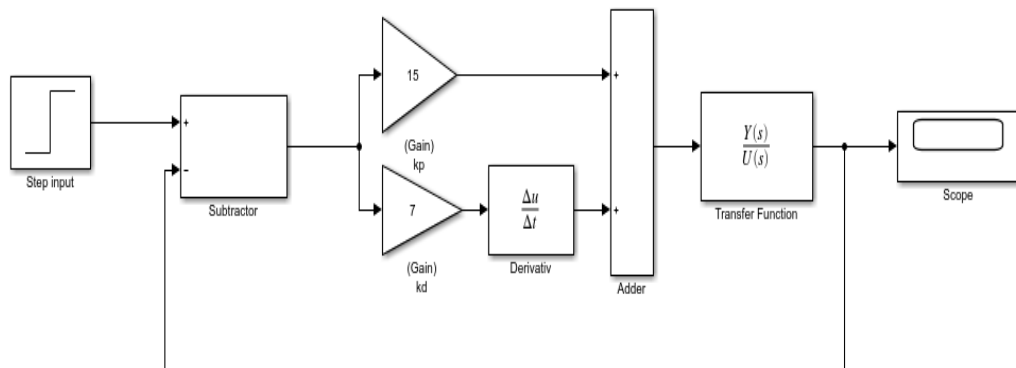
Continuous-time transfer function.

ans =

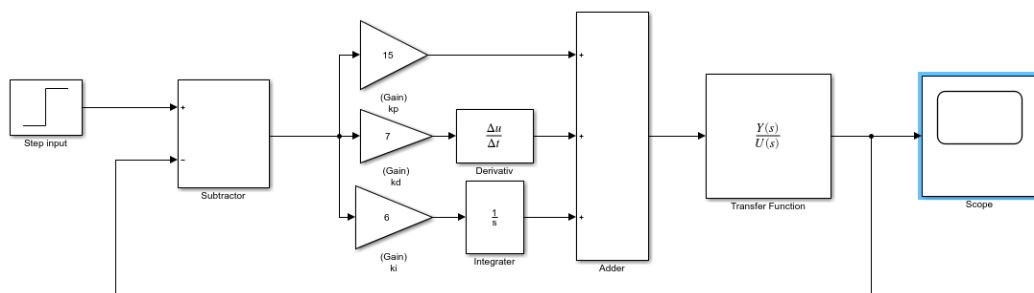
0.2500 + 1.1990i

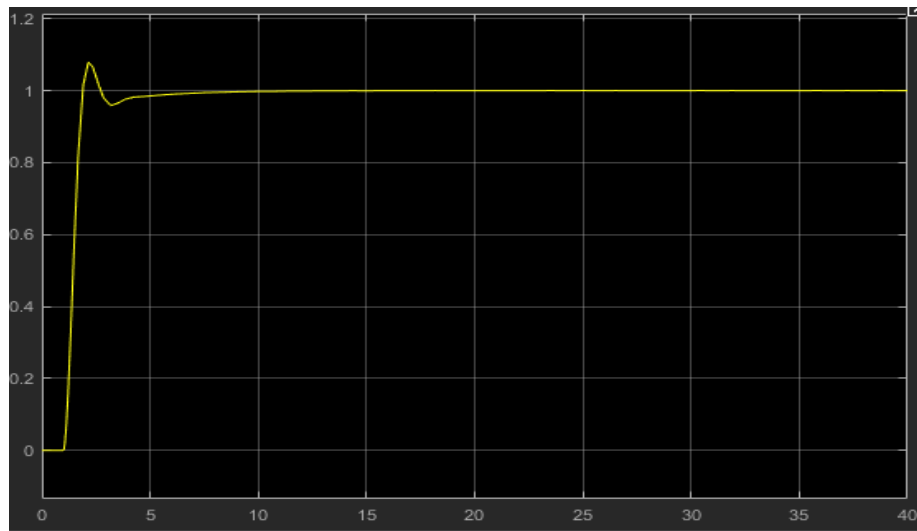
0.2500 - 1.1990i

After kp and ks



Using PID





After Adding Disturbance of 5 newton

