```matlab
den = conv([1 5],[1 1 0]);
K = [10 100]
%
subplot(211)
margin(K(1),den)
grid
%
subplot(212)
margin(K(2),den)
grid
%[K(1) 20 * log10(Gm1) Pm1 Wg1 Wc1;K(2) 20 * log10(Gm2) Pm2 Wg2 Wc2]
figure(2)
subplot(211)
sys = tf(K(1),den)
sysb = feedback(sys,1)
step(sysb)
grid
%
subplot(212)
sys1 = tf(K(2),den)
sysb1 = feedback(sys1,1)
step(sysb1)
grid
```
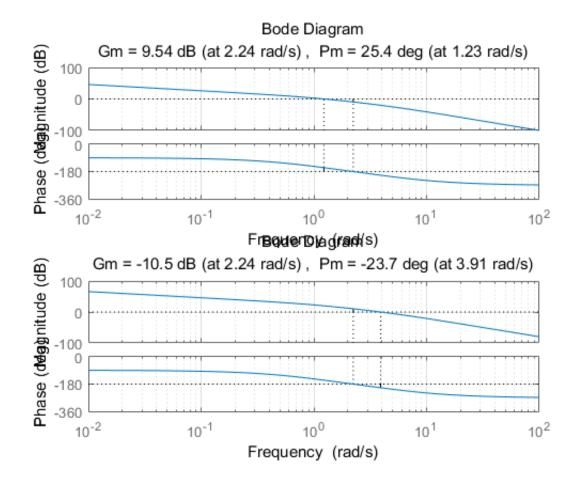
```
K =

    10    100


sys =

         10
  ----------------
   s^3 + 6 s^2 + 5 s

Continuous-time transfer function.


sysb =

           10
  ---------------------
   s^3 + 6 s^2 + 5 s + 10

Continuous-time transfer function.


sys1 =

         100
  ----------------
   s^3 + 6 s^2 + 5 s

Continuous-time transfer function.


sysb1 =
```

```
       100
----------------------
s^3 + 6 s^2 + 5 s + 100
```

Continuous-time transfer function.

Bode Diagram
Gm = 9.54 dB (at 2.24 rad/s) , Pm = 25.4 deg (at 1.23 rad/s)

Bode Diagram
Gm = -10.5 dB (at 2.24 rad/s) , Pm = -23.7 deg (at 3.91 rad/s)

Step Response

Step Response