
```
% File:           ME 430, Computer Assignment 2, Problem 1
% Author:         Bradley Anderson
% Collaborators:   None
% Date Created:    Mon, Nov 27, 2017
% Last Updated:    ^^
% Update Notes:    n/a

clear, clf, clc

syms s

s = tf('s');

G1 = 10 / ( (s)*(s+1)*(s+2) );

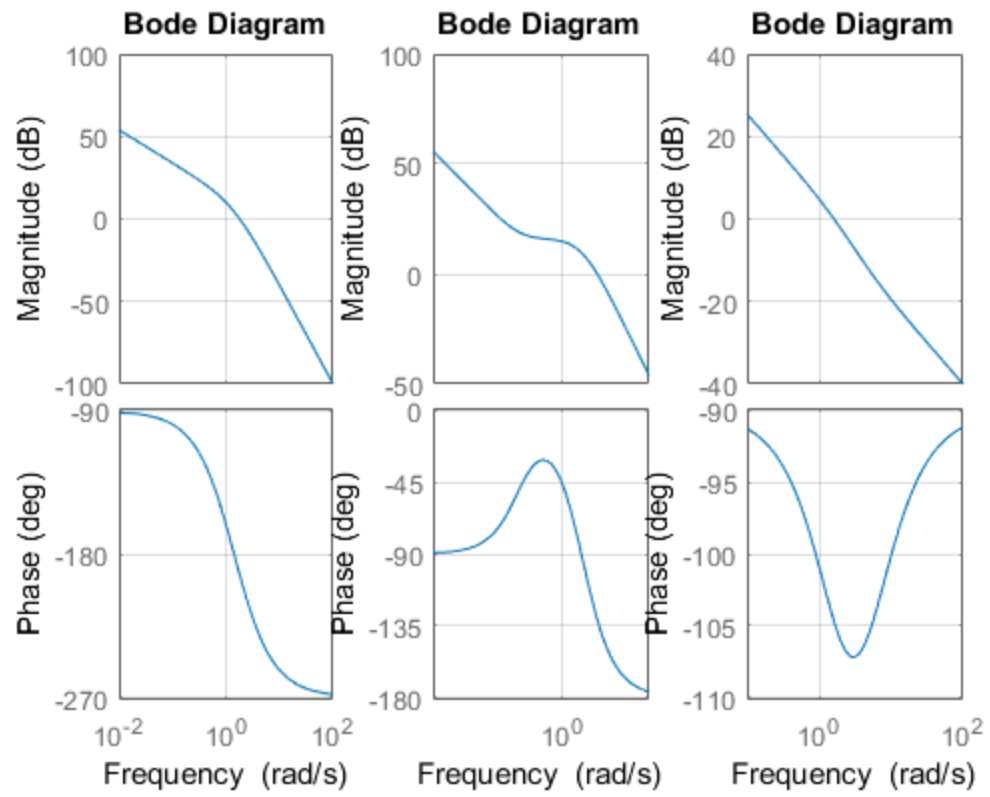
G2 = (50)*(s+0.1) / ( (s)*(s+2)*(s+4) );

G3 = (s+3)*(s+5) / ( (s)*(s+2)*(s+4) );

subplot(1,3,1)
bode(G1)
grid on

subplot(1,3,2)
bode(G2)
grid on

subplot(1,3,3)
bode(G3)
grid on
```



Published with MATLAB® R2016a

```
% File:           ME 430, Computer Assignment 2, Problem 2
% Author:         Bradley Anderson
% Collaborators:   None
% Date Created:    Mon, Nov 27, 2017
% Last Updated:    ^^
% Update Notes:    User prompt is commented out to handle
%                  publishing

clear, clc

%prompt = 'Please enter a value for K: ';
%K=input(prompt);
K = 40;
clf

syms s

s = tf('s');

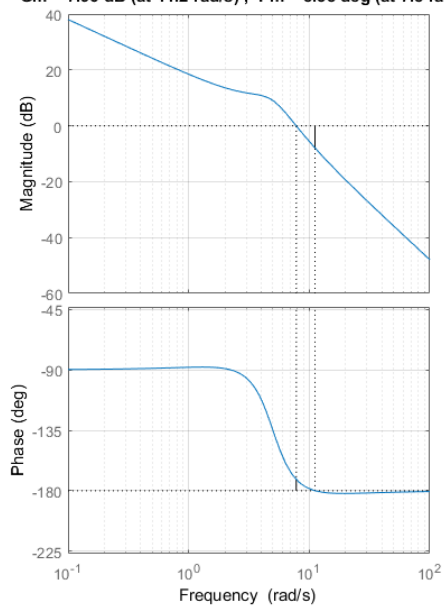
G1 = K*(s+5) / ( (s)*(s^2 + 4*s + 25) );

G2 = K / ( (s)*(s+3)*(s+12) );

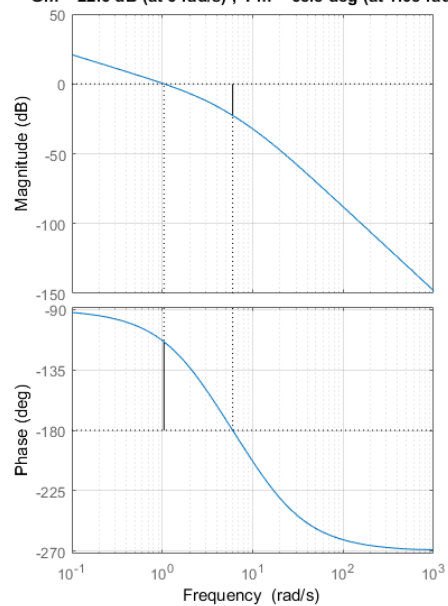
subplot(1,2,1)
bode(G1)
margin(G1)
%[Gm1,Pm1,Wgm1,Wpm1] = margin(G1)
grid on

subplot(1,2,2)
bode(G2)
margin(G2)
%[Gm2,Pm2,Wgm2,Wpm2] = margin(G2)
grid on
```

Bode Diagram
 $G_m = 7.96 \text{ dB}$ (at 11.2 rad/s), $P_m = 8.38 \text{ deg}$ (at 7.8 rad/s)



Bode Diagram
 $G_m = 22.6 \text{ dB}$ (at 6 rad/s), $P_m = 65.8 \text{ deg}$ (at 1.05 rad/s)



Published with MATLAB® R2016a

```
% File:           ME 430, Computer Assignment 2, Problem 3
% Author:         Bradley Anderson
% Collaborators:   None
% Date Created:    Mon, Nov 27, 2017
% Last Updated:    ^^
% Update Notes:    n/a
```

```
clear, clf, clc
```

```
syms s
```

```
s = tf('s');
```

```
G = 50*(s+3)*(s+5) / ( (s)*(s+2)*(s+4)*(s+6) );
```

```
subplot(1,2,1)
```

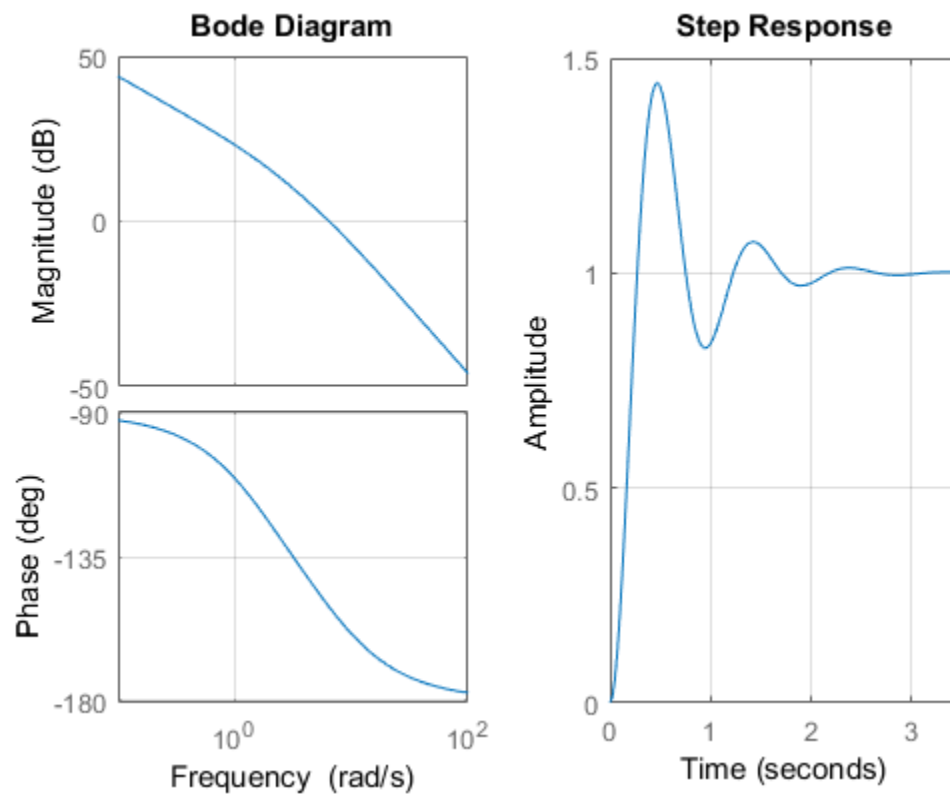
```
bode(G)
```

```
grid on
```

```
subplot(1,2,2)
```

```
step(G/(1+G))
```

```
grid on
```



Published with MATLAB® R2016a