Benjamin Kaplan - PS 7

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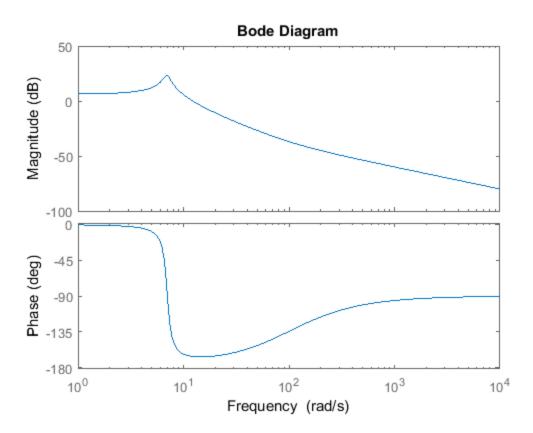
Question 1

```
clc
clear all
close all
DCgain = 20*log10( (0+100)/(0^2 +0 + 49))
Q= 7/1

bode(tf([0 1 100],[1 1 49]))
```

DCgain =

    6.1961

Q =

    7

Bode Diagram

Question 2

```
H = (10*j+10)*((10*j+30)^2)/((10*j+4)*(10*j+100))
angle(H)*180/pi
```

H =

  12.9396 + 1.8095i

ans =

   7.9607

Question 5

```
figure
s1 = tf([0 1 2],[1 4.8 4])
s2 = tf([0 -1 2],[1 4.8 4])
class(s1);
get(s1);
hold on
step(s1,s2); % unit step response of s1 and s2
```

```
legend('s1', 's2')
text('s2 has a negative amplitude dip towards the beginning');
hold off
```

s1 =

*   s + 2*
* ---------------*
* s^2 + 4.8 s + 4*

Continuous-time transfer function.

s2 =

*   -s + 2*
* ---------------*
* s^2 + 4.8 s + 4*

Continuous-time transfer function.

*   Numerator: {[0 1 2]}*
*   Denominator: {[1 4.8000 4]}*
*   Variable: 's'*
*   IODelay: 0*
*   InputDelay: 0*
*   OutputDelay: 0*
*   Ts: 0*
*   TimeUnit: 'seconds'*
*   InputName: {''}*
*   InputUnit: {''}*
*   InputGroup: [1x1 struct]*
*   OutputName: {''}*
*   OutputUnit: {''}*
*   OutputGroup: [1x1 struct]*
*   Name: ''*
*   Notes: {}*
*   UserData: []*
*   SamplingGrid: [1x1 struct]*

Error using text
Invalid parameter/value pair arguments

Error in BK7 (line 25)
text('s2 has a negative amplitude dip towards the beginning');

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