Save the following script of MATLAB commands as filename classexample.m,

```
% MATLAB script to do Schaum's Outline e.g. 15.11 done in
%lecture and attached in Course Supplemental Notes
num = [0 0 0 2]
den = [1/10 7/10 1 0]
sys = tf(num, den)
margin(sys)
```

Run the above script by typing the name of the script at the MATLAB prompt:

```
>> classexample

num =

     0     0     0     2


den =

    0.1000    0.7000    1.0000         0


Transfer function:
          2
---------------------
0.1 s^3 + 0.7 s^2 + s
```

Ouput is shown on the next page,

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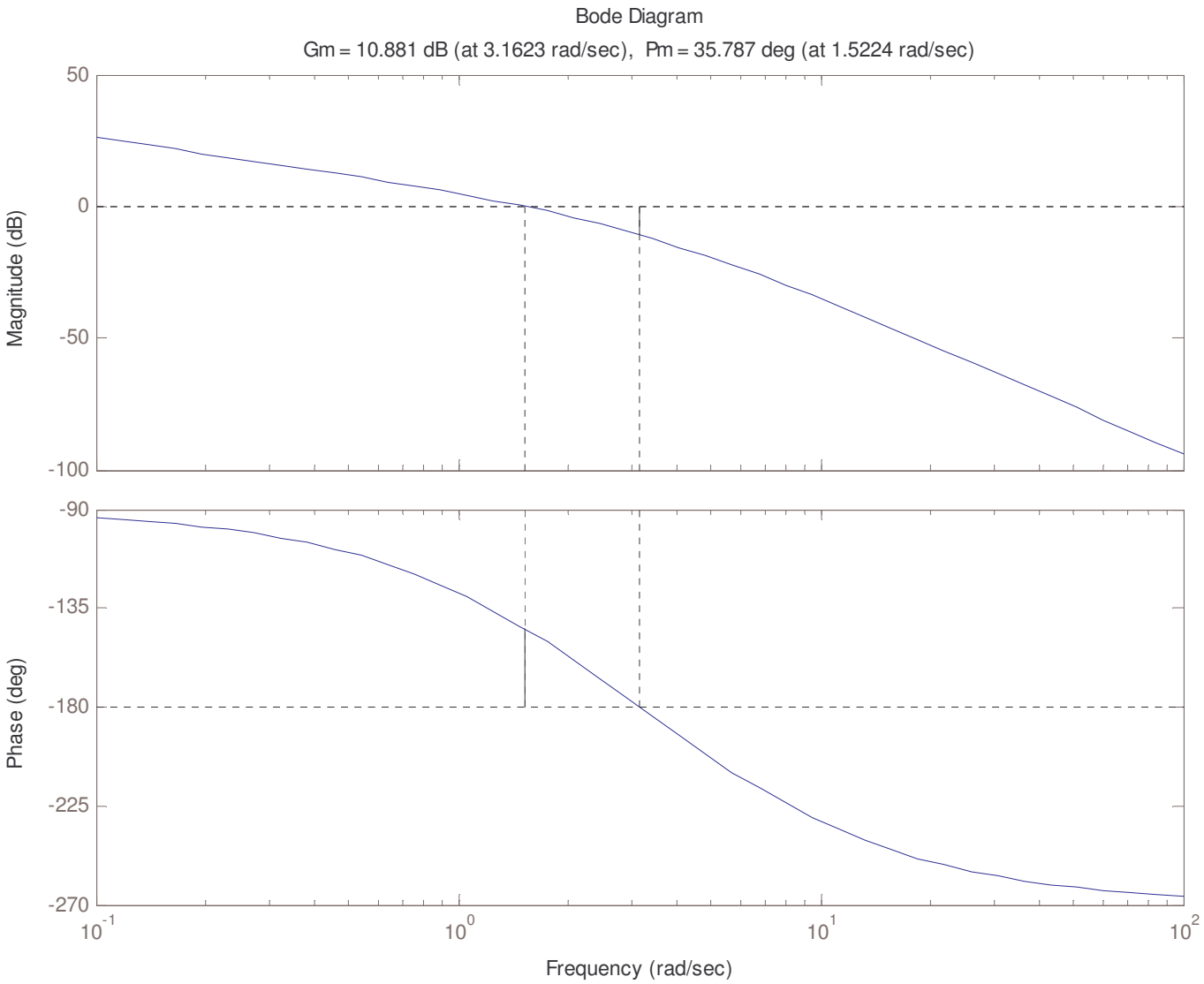
USING MATLAB TO CONSTRUCT BODE PLOTS



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```
% MATLAB Script illustrating Bode Plots for a more
%complicated example
% August 2, 2001
% Numerator of Transfer Function
num = 5*[0.1 1]
% Partial fraction exapnsion of denominator
f1 = [1 0]; f2 = [0.5 1]; f3 =[1/2500 .6/50 1];
% Use MATLAB function conv( ) to build denominator of T.F.
den = conv(f1,conv(f2,f3));
% Use MATLAB function tf() to construct T.F. from numerator
and denominator
sys = tf(num,den)
% Use MATLAB function margin() to draw Bode diagrams and
overlay Gain and Phase margin
margin(sys)
```

Run the above script by typing the name of the script at the MATLAB prompt:

```
>> bodeplot

num =

   0.5000    5.0000


Transfer function:

          0.5 s + 5
---------------------------------------
0.0002 s^4 + 0.0064 s^3 + 0.512 s^2 + s

>> margin(sys)
```

Ouput is shown on the next page,

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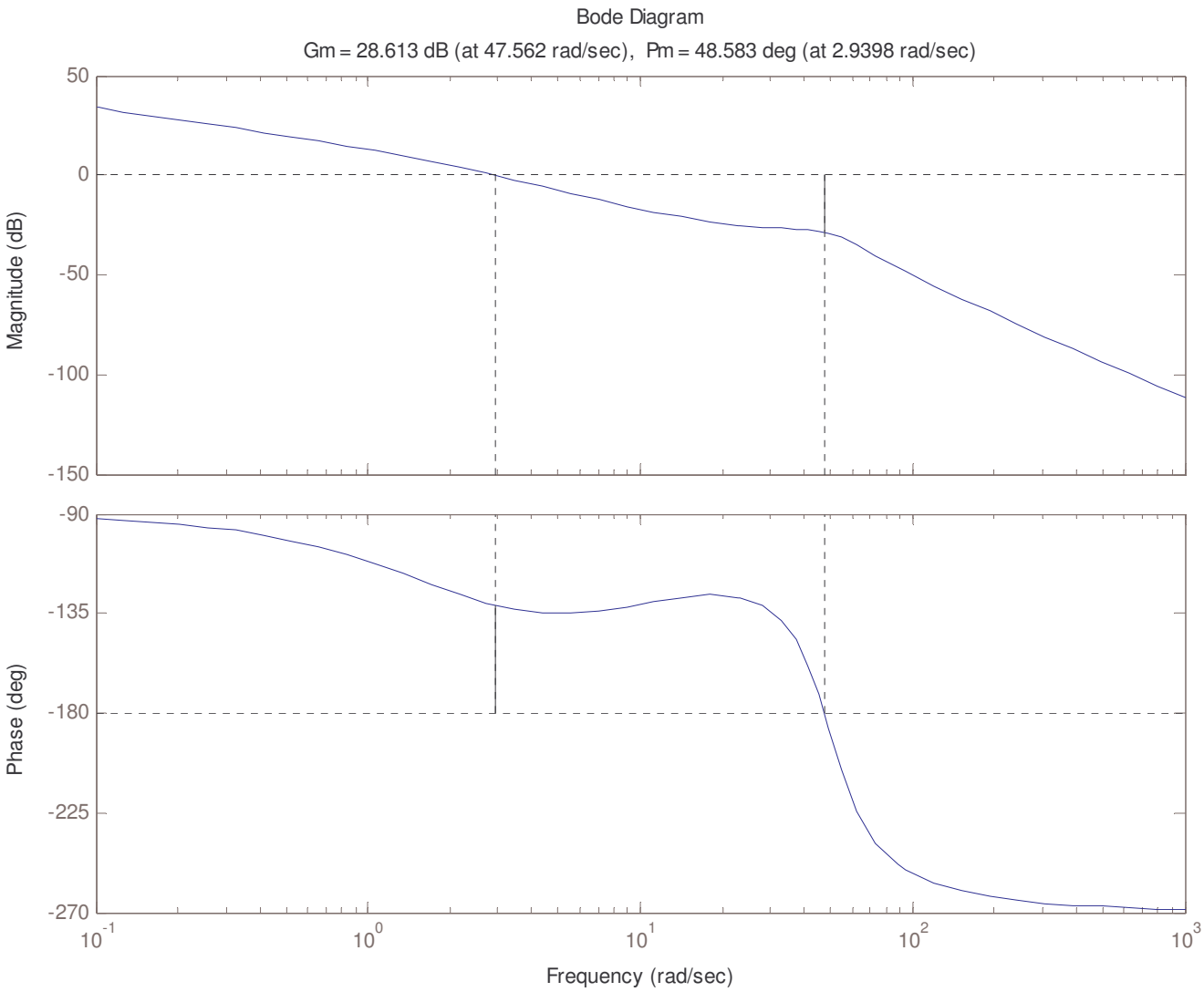
USING MATLAB TO CONSTRUCT BODE PLOTS



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