

Example: Systematic Method for Sketching Bode Plots

Sketch the Bode plot of

$$G(s) = \frac{5(s+1)(s-50)}{s^2(s^2+10s+100)}$$

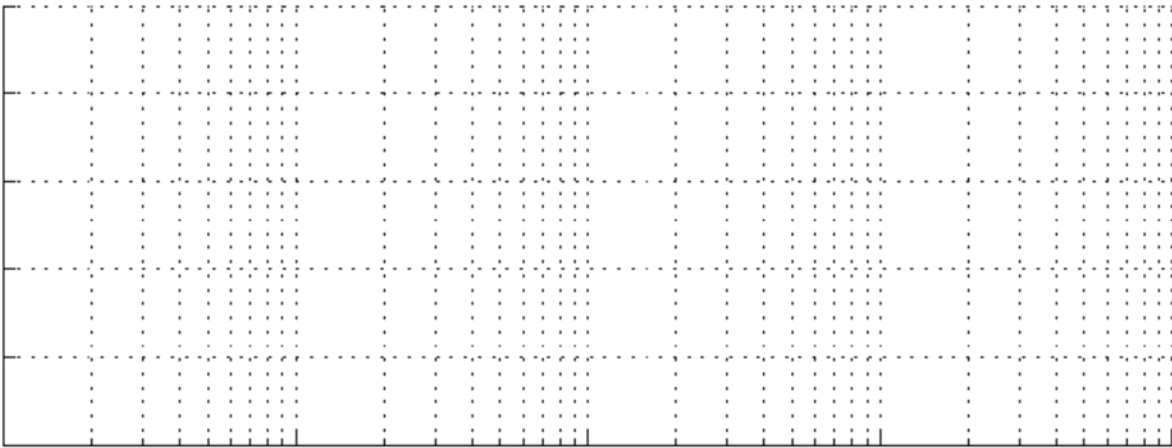
- 1) Put the transfer function in “Bode form” by factoring out the constant terms

- 2) List break frequencies and important information about each

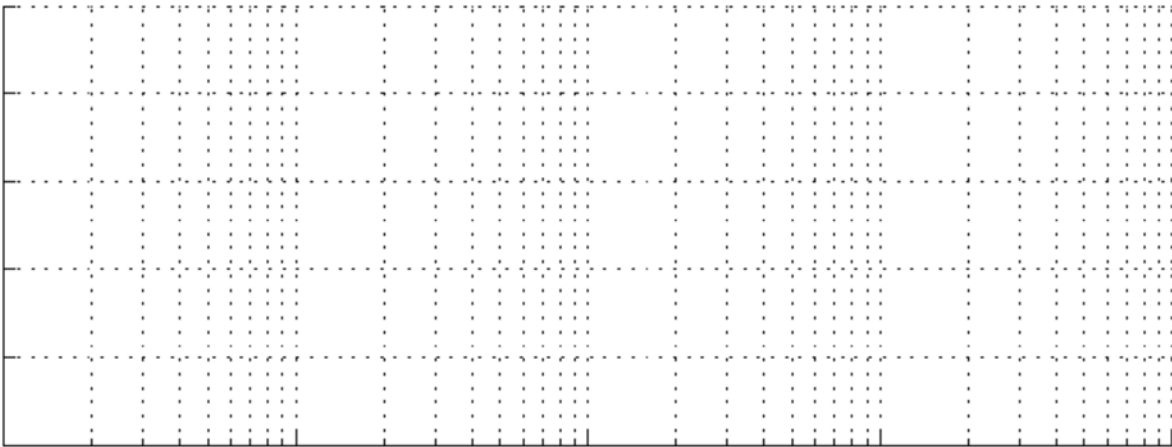
Break Frequency	Item (P/Z? L/RHP? #?)	Magnitude Slope	Phase Slope
-----------------	-----------------------	-----------------	-------------

- 3) Calculate the gain and phase of the low frequency term (today’s Mini Quiz)

4) Draw the magnitude plot



5) On the phase plot, indicate regions where the slope is non-zero



6) Use the above regions to draw the phase plot