

III. (35pts): For the following two amplifier gain functions, put $A(s)$ in the following generic form $A_M F_L(s) F_H(s)$. Identify A_M , $F_L(s)$, $F_H(s)$ and give the values of the low and/or high-frequency poles and zeroes in rad/s.

$$A_1(s) = 10^4 \frac{s^2(1 + \frac{10}{s})}{(s + 100)(s + 10^4)} \quad (2)$$

and

$$A_2(s) = \frac{10s^2}{(1 + \frac{s}{10})(1 + \frac{s}{100})(1 + \frac{s}{10^6})} \quad (3)$$

For $A_2(s)$, estimate the value of the gain (magnitude of $A(s)$ in dB) at $\omega = 1$ rad/s and 10^8 rad/s **without making a Bode plot**. Explain how you get your answers.