

BODE PLOTS : QUICK METHOD FOR SKETCHING FREQUENCY RESPONSE MAGNITUDE AND PHASE

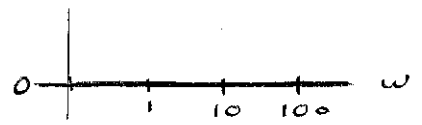
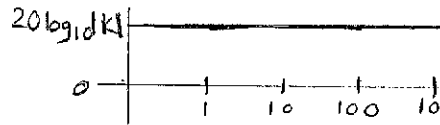
- METHOD :
- ① FACTOR NUMERATOR + DENOMINATOR OF $H(j\omega)$
 - ② SKETCH ASYMPTOTES FOR EACH ZERO + POLE TERM
 - ③ ADD THEM UP!

BASIC FORMS

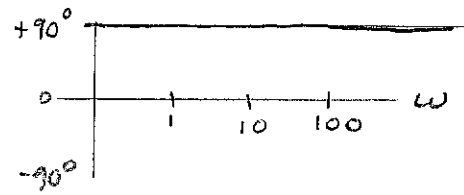
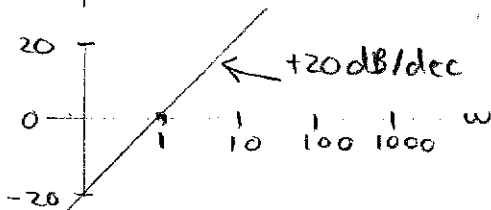
$20 \log_{10} |H(j\omega)|$
MAGNITUDE

$\angle H(j\omega)$
PHASE

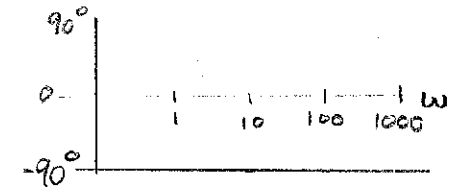
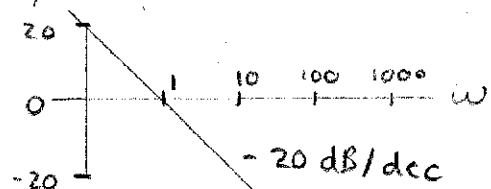
K CONSTANT



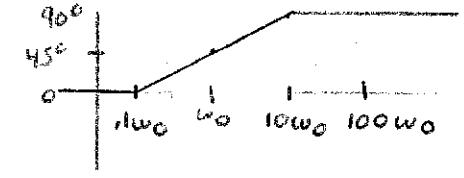
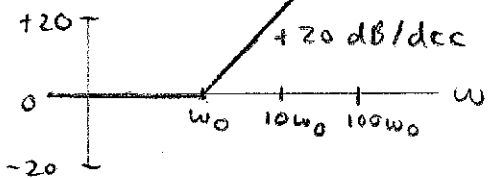
$j\omega$ ZERO AT ORIGIN



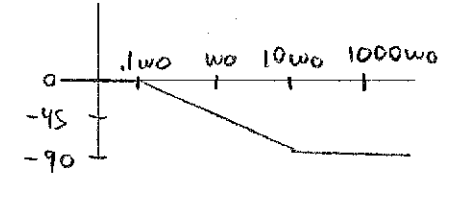
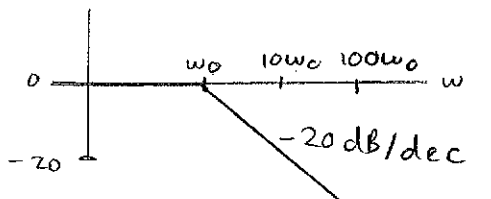
$1/j\omega$ POLE AT ORIGIN



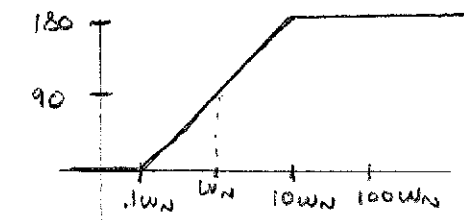
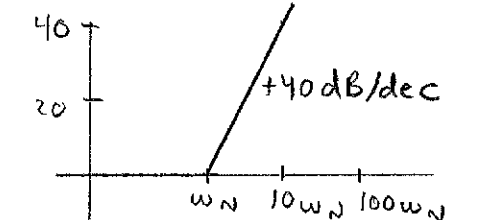
$H(j\omega) = 1 + \frac{j\omega}{\omega_0}$ ZERO AT ω_0



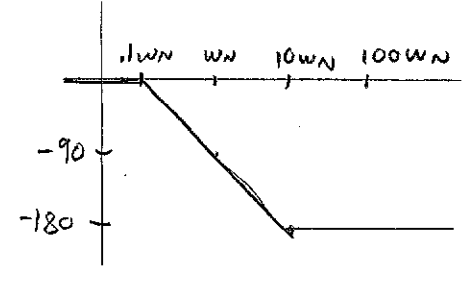
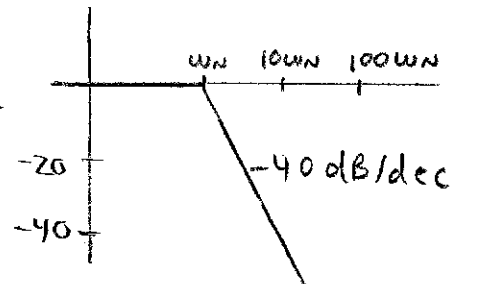
$1 / (1 + \frac{j\omega}{\omega_0})$ POLE AT ω_0



$1 + 2z\zeta(\frac{\omega}{\omega_n}) + (\frac{j\omega}{\omega_n})^2$



$1 / (1 + 2z\zeta(\frac{\omega}{\omega_n}) + (\frac{j\omega}{\omega_n})^2)$



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