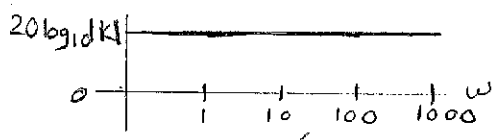
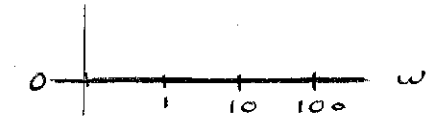
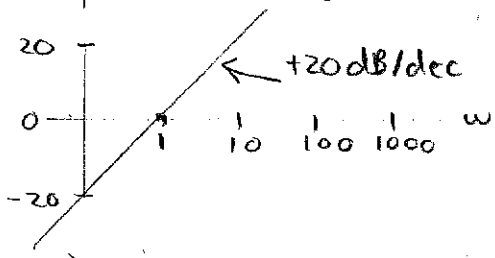
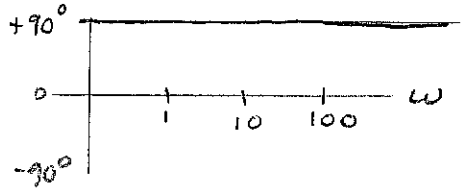
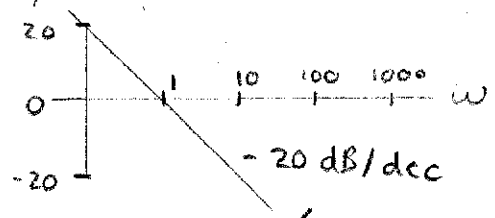
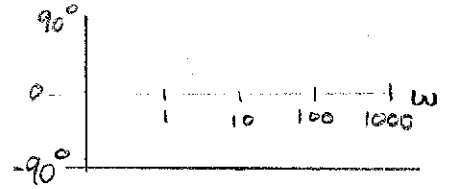
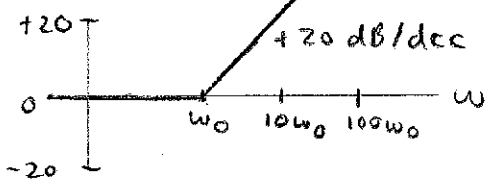
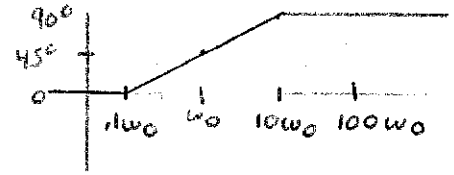
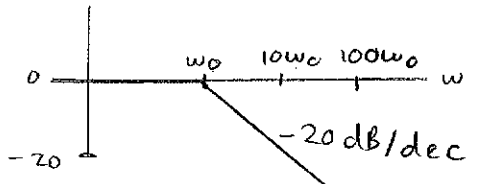
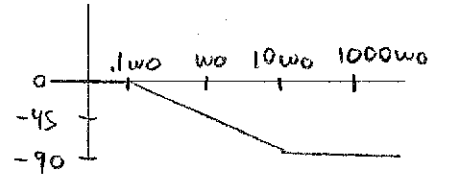
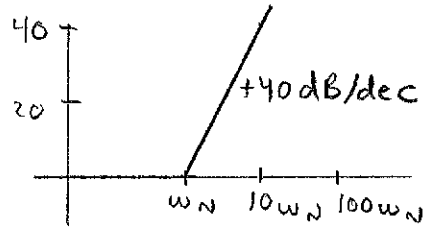
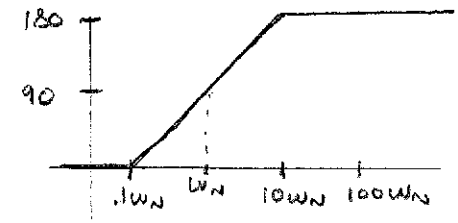
BODE PLOTS : QUICK METHOD FOR SKETCHING FREQUENCY RESPONSE MAGNITUDE AND PHASE

METHOD : ① FACTOR NUMERATOR & DENOMINATOR OF $H(j\omega)$

② SKETCH ASYMPTOTES FOR EACH ZERO & POLE TERM

③ ADD THEM UP!

BASIC FORMS	$20\log_{10}\lvert H(j\omega)\rvert$ MAGNITUDE	$\angle H(j\omega)$ PHASE
$H(j\omega) =$ K CONSTANT		
$j\omega$ ZERO AT ORIGIN		
$\frac{1}{j\omega}$ POLE AT ORIGIN		
$1+\frac{j\omega}{\omega_0}$ ZERO AT $-\omega_0$		
$\frac{1}{1+\frac{j\omega}{\omega_0}}$ POLE AT ω_0		
$1+2j\zeta\left(\frac{\omega}{\omega_N}\right)+\left(\frac{j\omega}{\omega_N}\right)^2$		
$\frac{1}{1+2j\zeta\left(\frac{\omega}{\omega_N}\right)+\left(\frac{j\omega}{\omega_N}\right)^2}$