5 parameters characterize a bandpass filter

- The center frequency, \( \omega_0 \)
- The two cutoff frequencies, \( \omega_{c1} \) and \( \omega_{c2} \) (-3 dB points), (Note that \( \omega_0 \) is geometric mean of \( \omega_{c1} \) and \( \omega_{c2} \))
- The bandwidth, \( \beta = \omega_{c2} - \omega_{c1} \)
- And the Quality Factor, \( Q = \omega_0/\beta \)

Recipe for solution

- Write \( H(\omega) \)
- Convert to s-domain, \( H(s) \)
- Find zeros and poles of \( H(s) \)
- For \( s = j\omega \), write \( H(\omega) \)
- Plot \( A_{dB} = 20 \log_{10} |H(\omega)| \) and \( \angle H(\omega) \)