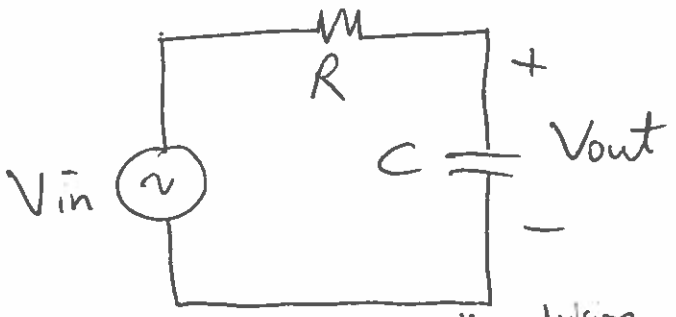
Additional Bode Plot Approximation Example

Sketch the Bode plot approximation (magnitude & phase) of the following circuit, where $H(s) = V_{out}(s)/V_{in}(s)$:



Use voltage division to find $H = V_{out}/V_{in}$; also, recall that $s = j\omega$

$$H(s) = \frac{V_{out}(s)}{V_{in}(s)} = \overbrace{\frac{1/sC}{R + 1/sC}}^{\text{voltage division}} \underbrace{(sC)}_{\text{to cancel the } 1/sC \text{ terms}} = \frac{1}{1+sRC} = \underbrace{\frac{1}{1 + s/\omega_{p1}}}_{\text{Bode approximation form, where } \omega_{p1} = \frac{1}{RC}}$$

→ Looking at H, we see that all we have is a pole at $\omega_{p1} = \frac{1}{RC}$, so: