

Lab 4

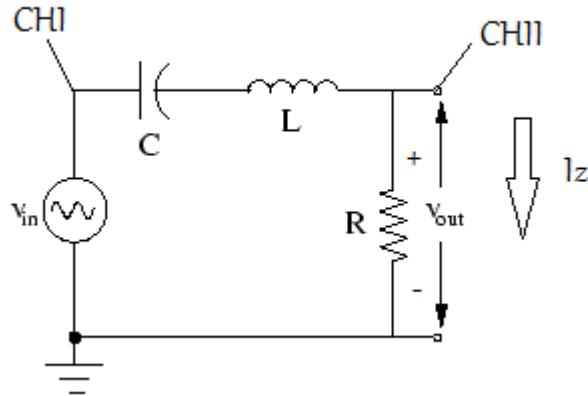
ECE 232 - Advanced Electrical Circuit Analysis Lab

Frequency response (phase, magnitude characteristics)

Q1)

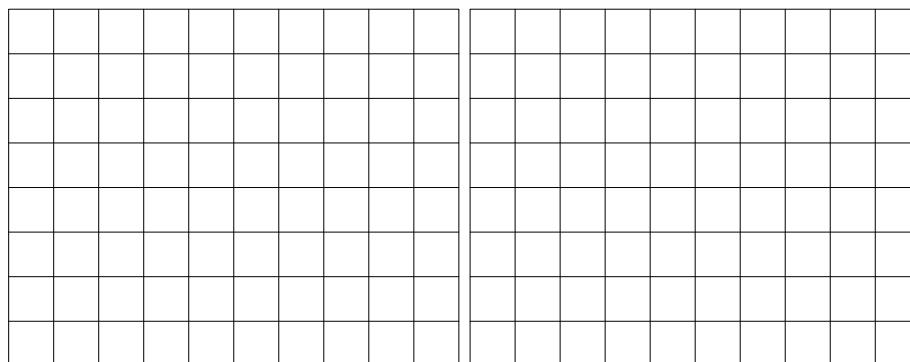
a) What is the resonant frequency for the circuit below

b) For the same circuit find the magnitude and phase of $H(j\omega) = \frac{V_{out}(j\omega)}{V_{in}(j\omega)}$ when $f = 100$ Hz, $f =$ resonant frequency and $f = 1000$ Hz. Let $V_{in}(t) = 1 \sin 2\pi ft$ and $L = 0.1$ H, $C = 10\mu F$, $R = 1k\Omega$. Draw also what you observe at the oscilloscope both at YT and XY format of the display menu of the oscilloscope.



f=100 Hz (YT format)

f=100 Hz (XY format)

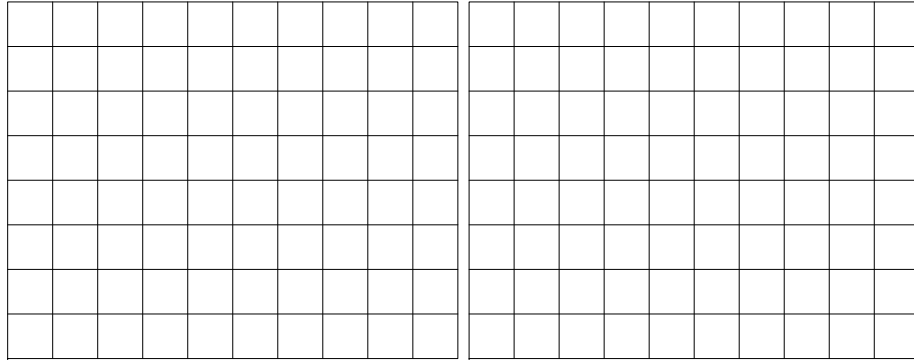


ChI (V_{in}(t)):

ChII (V_{out}(t)):

Second/Div:

- f=resonant frequency Hz (YT format) f=resonant frequency Hz (XY format)



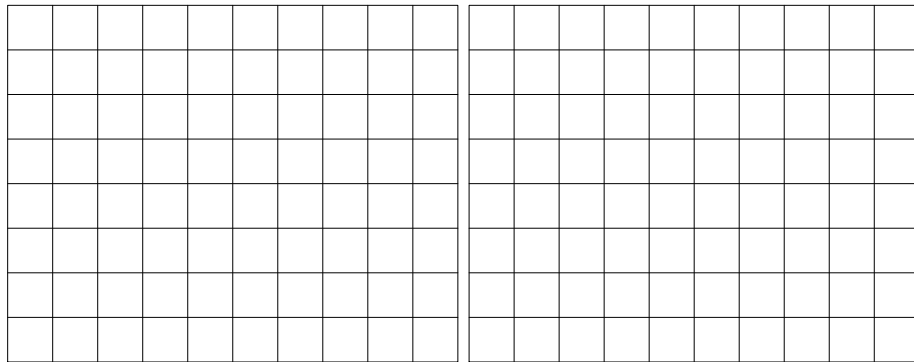
ChI (Vin(t)):

ChII (Voot(t)):

Second/Div:

- f=1000 Hz (YT format)

f=1000 Hz (XY format)



ChI (Vin(t)):

ChII (Voot(t)):

Second/Div: