



ECET 1101

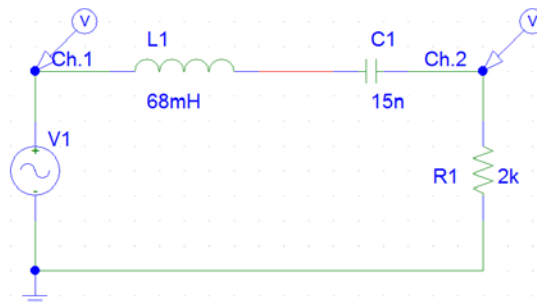
Circuits I

Lab 10 – Series AC Circuits



P-Spice Analysis

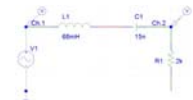
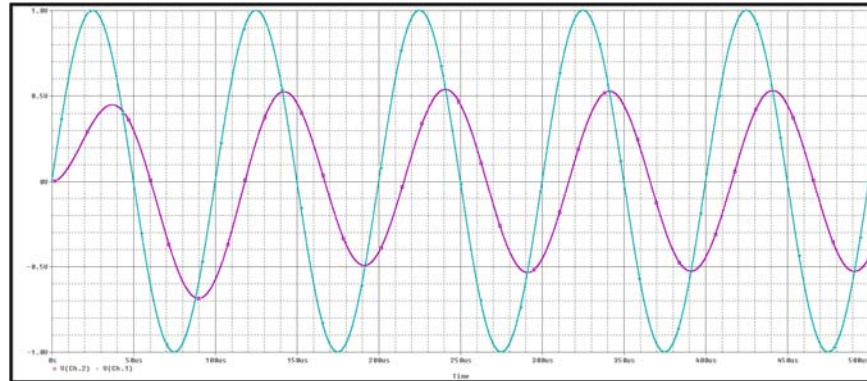
The following circuit was entered into P-Spice and configured as instructed in the laboratory handouts:





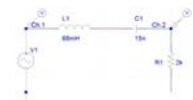
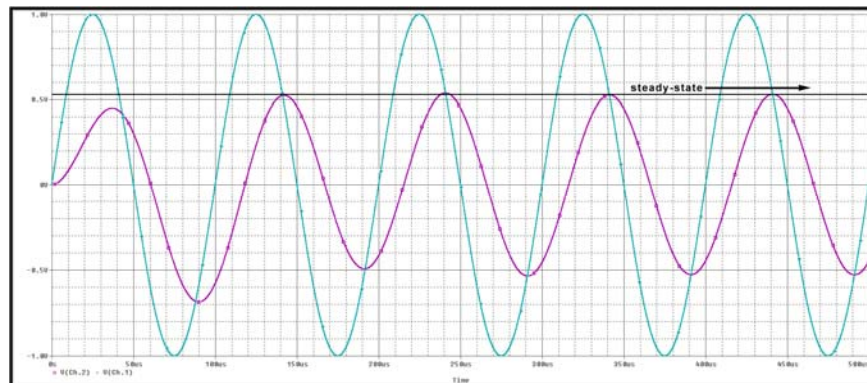
P-Spice Analysis

A transient analysis of the circuit returned the following plot:



P-Spice Analysis

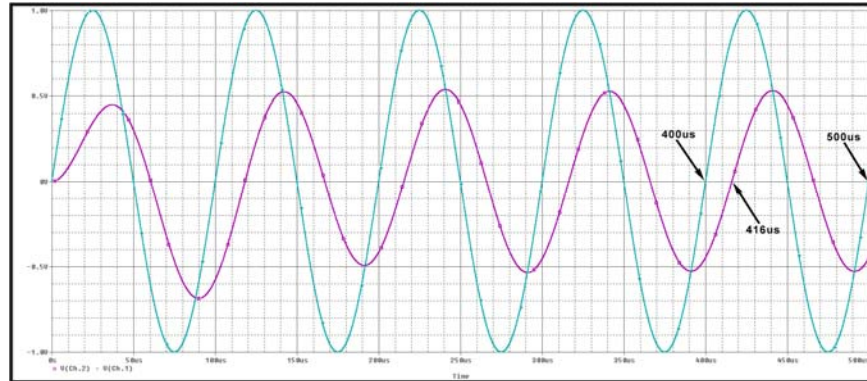
Notice that steady-state conditions occur after the 3rd cycle.





P-Spice Analysis

The following times were measured using the cursor function:



P-Spice Analysis

If the phase angle of the source voltage is assumed to be 0° ,

then the phase angle of the resistor voltage may be determined in the following manner:

$$T = 500us - 400us = 100us$$

$$\Delta t = 416us - 400us = 16us$$

$$\theta = \frac{\Delta t}{T} \cdot 360^\circ = \frac{16us}{100us} \cdot 360^\circ = -57.6^\circ$$

(negative since shifted to right)

