**ENGG104 Tutorial 7 Class Questions**

Team Name: _____

**Question 1 [typical exam question]**

For the network in Fig. 85:

**a.** Determine the mathematical expressions for the current $i_L$ and the voltage $v_L$ when the switch is closed.

**b.** Repeat part (a) if the switch is opened after a period of five time constants has passed.

**c.** Sketch the waveforms of parts (a) and (b) on the same set of axes.

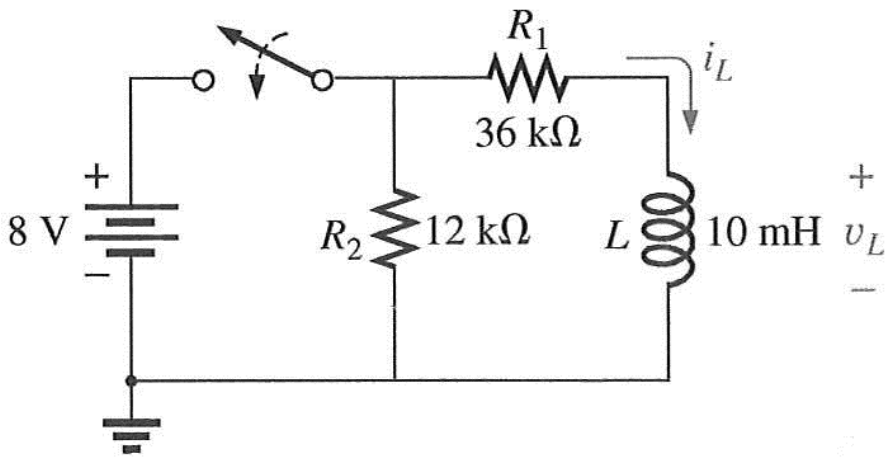



FIG. 85

**Question 2 [typical exam question]**

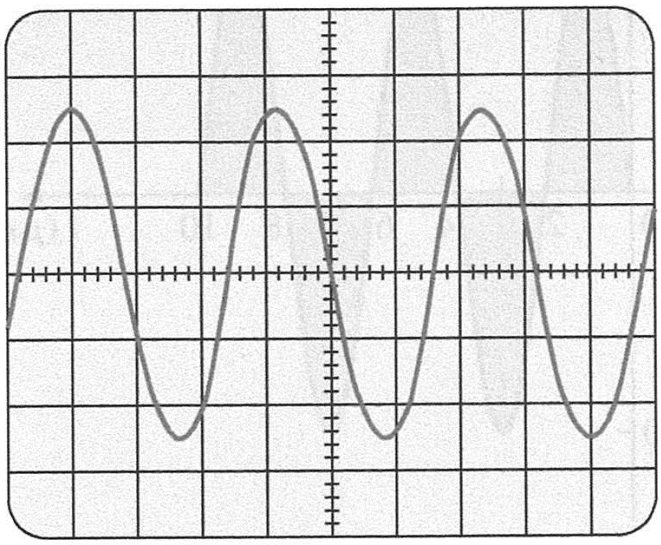
**9.** For the oscilloscope pattern of Fig. 84:

**a.** Determine the peak amplitude.

**b.** Find the period.

**c.** Calculate the frequency.

Redraw the oscilloscope pattern if a +20 mV dc level were added to the input waveform.

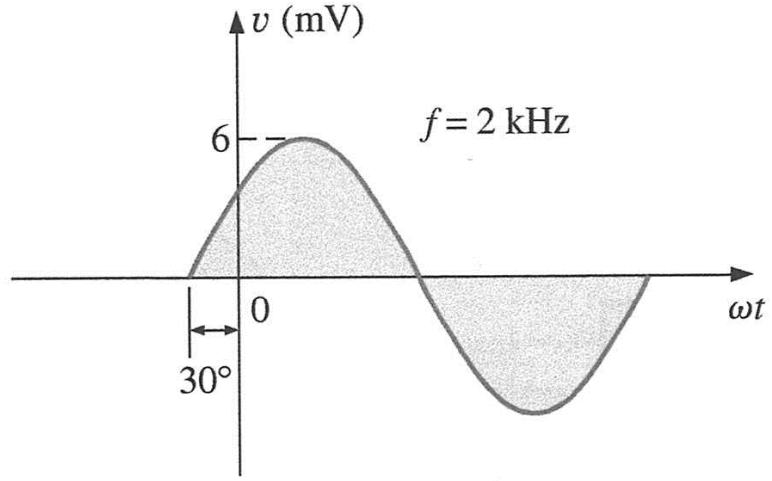


Vertical sensitivity = 50 mV/div.
Horizontal sensitivity = 10 $\mu$s/div.

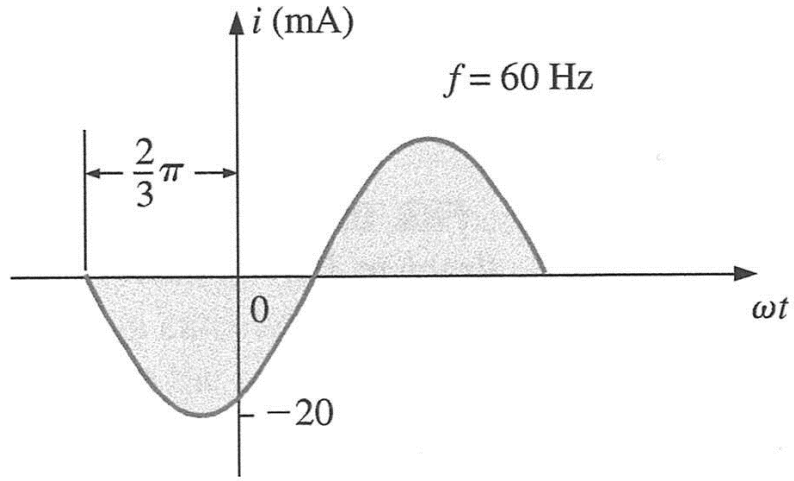
**FIG. 84**
*Problem 9.*

**Question 3**

**27.** Write the analytical expression for the waveforms of Fig. 85 with the phase angle in degrees.




(a)




(b)

**FIG. 85**
*Problem 27.*

**Question 4**

Find the average value of the periodic waveform in Fig. 92.

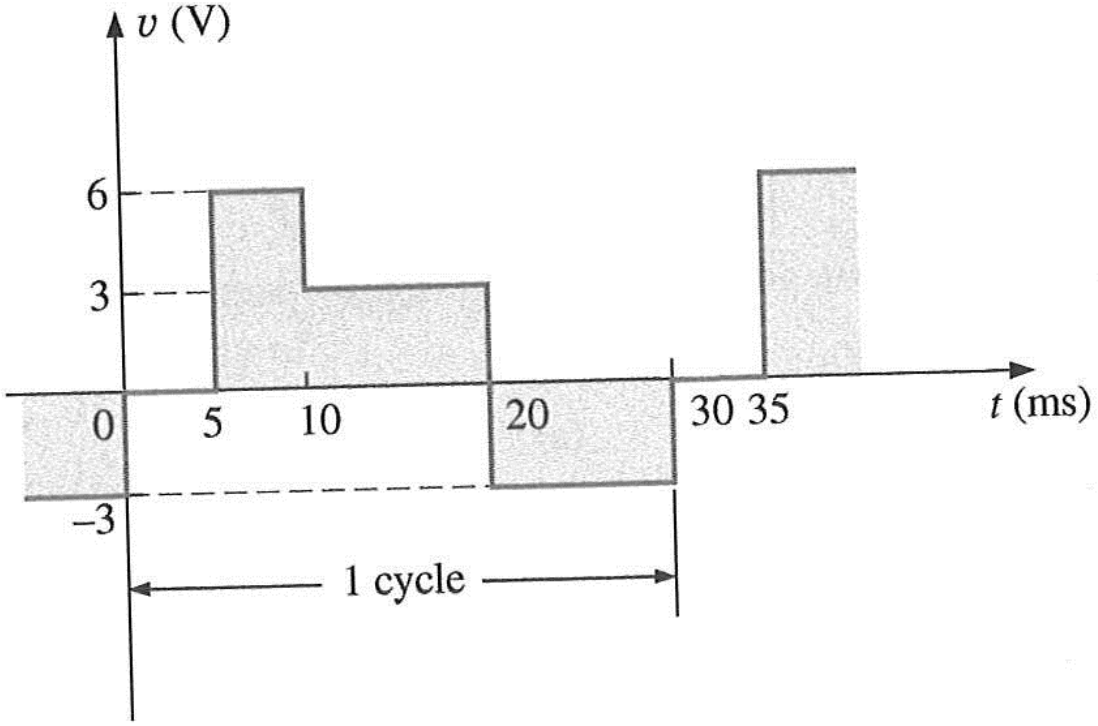



FIG. 92