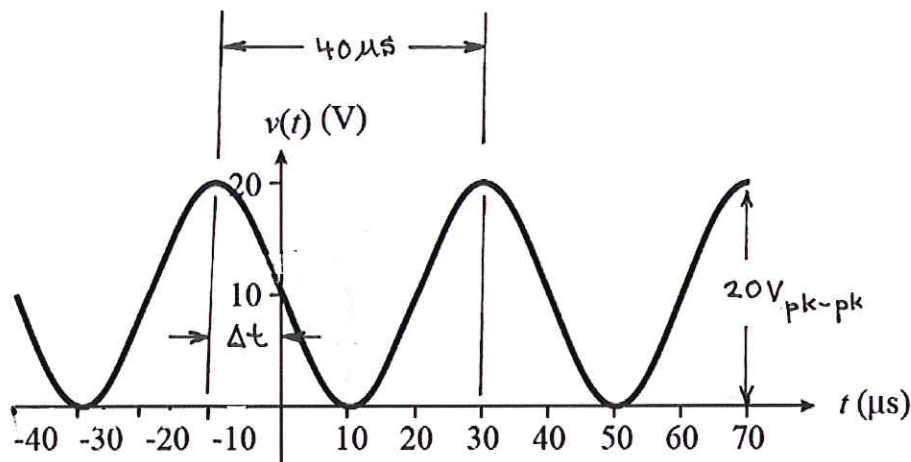


Ex:



- Find the peak-to-peak voltage of  $v(t)$ .
- Find the frequency of  $v(t)$ .
- Find the phase shift of  $v(t)$ .

sol'n: a) The peak-to-peak voltage is the max  $v(t)$  minus the min  $v(t)$ :

$$v_{pk-pk} = 20V - 0V = 20V$$

- b) The period of  $v(t)$  is the time between peaks.

$$T = 30\mu s - -10\mu s = 40\mu s$$

Frequency is the inverse of the period:

$$f = \frac{1}{T} = \frac{1}{40\mu s} = 25\text{ kHz}$$

- c) The phase shift is determined by how far the peak is shifted from  $t=0$ .

$$\phi = -\frac{\Delta t}{T} \cdot 360^\circ = -\frac{-10\mu s}{40\mu s} \cdot 360^\circ = +90^\circ$$