

Chapter 6, Solution 40.

$$i = \begin{cases} 5t, & 0 < t < 2\text{ ms} \\ 10, & 2 < t < 4\text{ ms} \\ 30 - 5t, & 4 < t < 6\text{ ms} \end{cases}$$

$$v = L \frac{di}{dt} = \frac{5 \times 10^{-3}}{10^{-3}} \begin{cases} 5, & 0 < t < 2\text{ ms} \\ 0, & 2 < t < 4\text{ ms} \\ -5, & 4 < t < 6\text{ ms} \end{cases} = \begin{cases} 25, & 0 < t < 2\text{ ms} \\ 0, & 2 < t < 4\text{ ms} \\ -25, & 4 < t < 6\text{ ms} \end{cases}$$

$$\text{At } t = 1\text{ ms, } v = \mathbf{25\text{ V}}$$

$$\text{At } t = 3\text{ ms, } v = \mathbf{0\text{ V}}$$

$$\text{At } t = 5\text{ ms, } v = \mathbf{-25\text{ V}}$$