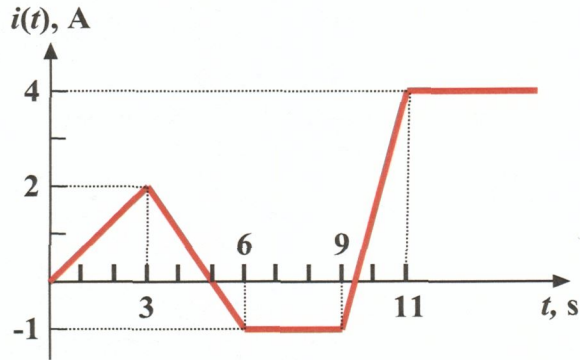


EE 2240  
**Problem #06**

The current through a 60 mH inductor is shown. Determine and sketch the voltage across that inductor.



$$v = L \frac{di}{dt} = 0.06 \frac{di}{dt}$$

$$\frac{di}{dt} = \begin{cases} \frac{2}{3} \frac{\text{A}}{\text{s}} & : 0 < t < 3\text{s} \\ -\frac{3}{3} = -1 \frac{\text{A}}{\text{s}} & : 3\text{s} < t < 6\text{s} \\ 0 & : 6\text{s} < t < 9\text{s} \\ \frac{2}{3} \frac{\text{A}}{\text{s}} & : 9\text{s} < t < 11\text{s} \\ 0 & : 11\text{s} < t \end{cases}, \quad v(t) = \begin{cases} 40\text{ mV} & : 0 < t < 3\text{s} \\ -60\text{ mV} & : 3\text{s} < t < 6\text{s} \\ 0 & : 6\text{s} < t < 9\text{s} \\ 150\text{ mV} & : 9\text{s} < t < 11\text{s} \\ 0 & : 11\text{s} < t \end{cases}$$

