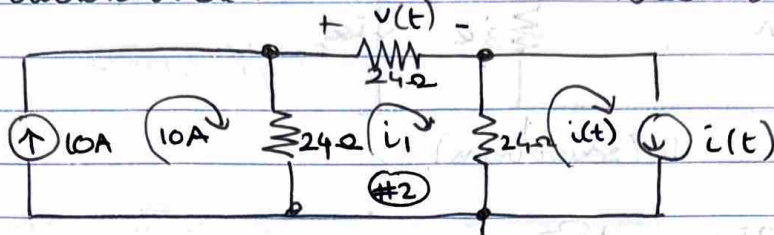


P7.5-13

Inductor current $i(t) = 5 - 3e^{-4t}$ A $\rightarrow$ treat inductor as source



$$\text{In loop 2: } 24(i_1 - 10) + 24(i_1) + 24(i_1 - i(t)) = 0$$

$$\Rightarrow (24 \times 3) i_1 - 240 - 24 i(t) = 0$$

$$\therefore i_1 = \frac{24(10 + i(t))}{24 \times 3} = \frac{10 + i(t)}{3}$$

$$\begin{aligned} \therefore v(t) &= i_1(t) \times R = \frac{10 + i(t)}{3} \times 24\Omega \\ &= 8(10 + 5 - 3e^{-4t}) = 8(15 - 3e^{-4t}) \end{aligned}$$

$$\boxed{v(t) = 24(5 - e^{-4t}) \text{ V}, t \geq 0}$$