

86. (a) $L = \Phi/i = 26 \times 10^{-3} \text{ Wb}/5.5 \text{ A} = 4.7 \times 10^{-3} \text{ H}$.

(b) We use Eq. 31-43 to solve for t :

$$\begin{aligned} t &= -\tau_L \ln \left(1 - \frac{iR}{\mathcal{E}} \right) = -\frac{L}{R} \ln \left(1 - \frac{iR}{\mathcal{E}} \right) \\ &= -\frac{4.7 \times 10^{-3} \text{ H}}{0.75 \, \Omega} \ln \left[1 - \frac{(2.5 \text{ A})(0.75 \, \Omega)}{6.0 \text{ V}} \right] = 2.4 \times 10^{-3} \text{ s} . \end{aligned}$$