

78. We write $i = i_0 e^{-t/\tau_L}$ and note that $i = 10\% i_0$. We solve for t :

$$t = \tau_L \ln \left(\frac{i_0}{i} \right) = \frac{L}{R} \ln \left(\frac{i_0}{i} \right) = \frac{2.00 \text{ H}}{3.00 \Omega} \ln \left(\frac{i_0}{0.100 i_0} \right) = 1.54 \text{ s} .$$