48. (a) Immediately after the switch is closed $\mathcal{E} - \mathcal{E}_L = iR$. But $i = 0$ at this instant, so $\mathcal{E}_L = \mathcal{E}$.

(b) $\mathcal{E}_L(t) = \mathcal{E}e^{-t/\tau_L} = \mathcal{E}e^{-2.0\tau_L/\tau_L} = \mathcal{E}e^{-2.0} = 0.135\mathcal{E}$.

(c) From $\mathcal{E}_L(t) = \mathcal{E}e^{-t/\tau_L}$ we obtain

$$\frac{t}{\tau_L} = \ln\left(\frac{\mathcal{E}}{\mathcal{E}_L}\right) = \ln 2 \implies t = \tau_L \ln 2 = 0.693\tau_L \ .$$