RL Circuit: Application (6)

In the RL circuit shown the switch has been at position a for a long time and is thrown to position b at time $t = 0$. At that instant the current has the value $I_0 = 0.7\text{A}$ and decreases at the rate $dI/dt = -360\text{A/s}$.

(a) Find the EMF $\mathcal{E}$ of the battery.

(b) Find the resistance R of the resistor.

(c) At what time t_1 has the current decreased to the value $I_1 = 0.2\text{A}$?

(d) Find the voltage across the inductor at time t_1.