

**30.20.** A  $15.0\text{-}\Omega$  resistor and a coil are connected in series with a  $6.30\text{-V}$  battery with negligible internal resistance and a closed switch. (a) At  $2.00\text{ ms}$  after the switch is opened the current has decayed to  $0.210\text{ A}$ . Calculate the inductance of the coil. (b) Calculate the time constant of the circuit. (c) How long after the switch is opened will the current reach  $1.00\%$  of its original value?