

1. A 10-V battery is connected in series to a 5-Ohm resistor and a 2H inductor. Select reasonable scales for the axes, and plot the current $i(t)$.
2. same, but with the battery removed and initial current in the inductor $i_0 = 2 A$. [use the same graph to plot].
3. in the attached circuits A and B the EMF $E=12 V$, $R_1 = 1 \Omega$, $R_2 = 2 \Omega$. In each case find all currents at $t = 0$ (after the switch is closed) and at $t \rightarrow \infty$ (a long time after that).
4. A $10 nF$ capacitor is charged with $Q = 1 \mu C$ and is connected to a $1 mH$ inductor. Find the maximum current. [Use energy conservation].