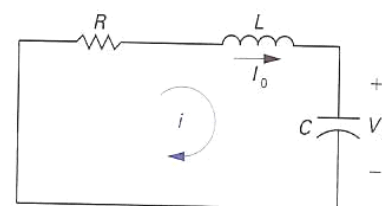## Problem 1:

The current in the circuit in the figure is known to be

$$i(t) = B_1 e^{-80t} \cos 60t + B_2 e^{-80t} \sin 60t \quad , t \geq 0.$$
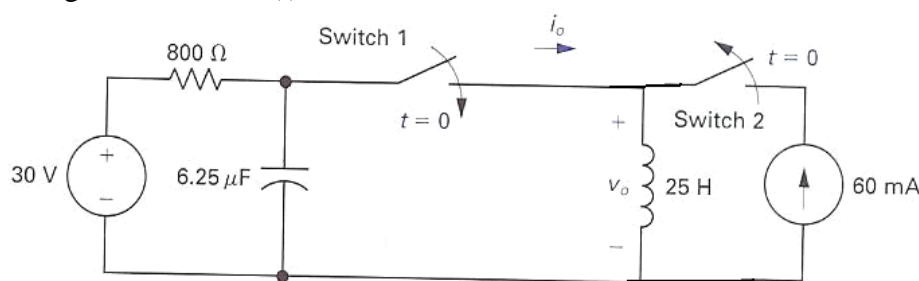
The capacitor has a value of $500\mu F$; the initial value of the
current is zero, and the initial voltage on the capacitor is 1V.
Find the values of $R, L, B_1,$ and B_2.

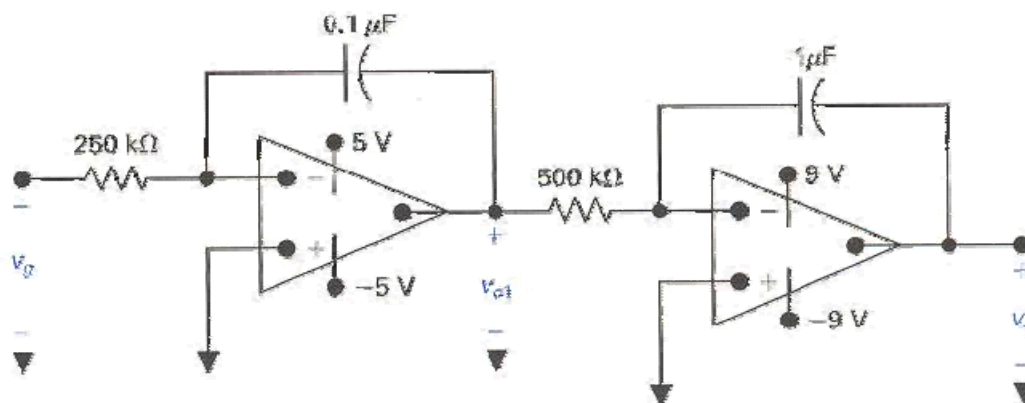## Problem 2:

The shown circuit has two switches which moves together (one opens and the other closes
at the same time $t=0$). Assume the circuit has been in the same condition for long time
before switching at $t=0$. Find $v_o(t)$ for $t \geq 0$

Problem 3:

For the circuit shown in the Figure, the input voltage v_g jumps instantaneously from 0 to 25
mV

a) For the circuit shown in the figure. If $v_{o1}(0)= 5$ V and $v_o(0)= 8$ V, **show** that the
equation for $v_o(t)$ for $0 \leq t < t_{sat}$ is given by

$$v_o(t) = t^2 - 10t + 8 \quad V \qquad \underline{\text{show details}}$$

b) How long is it before the circuit saturates?

Good Luck, **Dr. Ali Muqaibel**