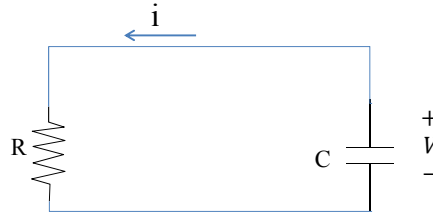


Problem 1

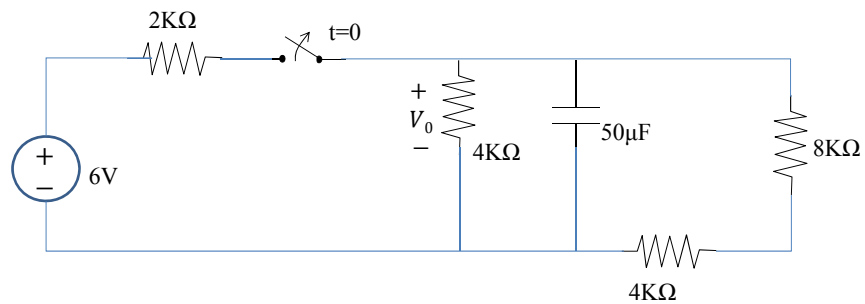
In the following circuit, if $v = 10e^{-2t}$ V and $i = 0.4e^{-2t}$ A, $t > 0$

- Find R and C.
- Determine the time constant.
- Calculate the initial energy in the capacitor.
- Obtain the time it takes to dissipate 50 percent of the initial energy.

**Problem 2**

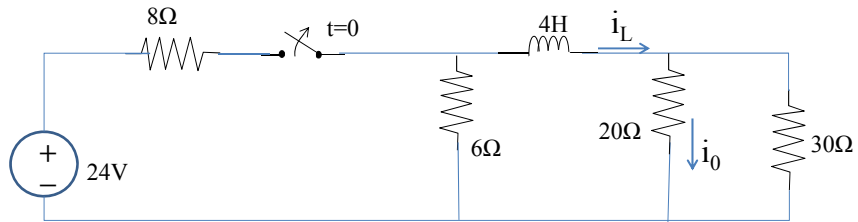
The switch in following circuit opens at $t=0$. Find v_0 for $t > 0$.

$$(V_0(0.1) = 1.848\text{V})$$



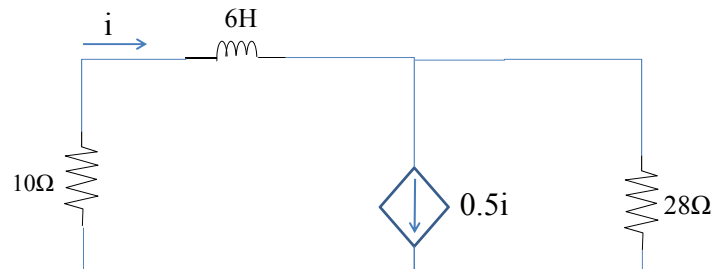
Problem 3

In the following circuit, find i_L and i_0 for $t > 0$. ($i_L(0.1) = 0.425\text{A}$)

**Problem 4**

In the following circuit, find $i(t)$ for $t > 0$ if $i(0) = 2\text{A}$.

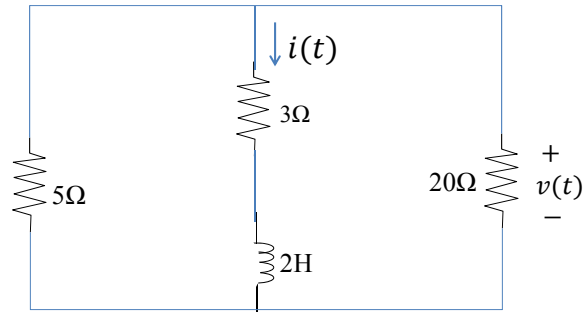
($i(1) = 0.0366\text{A}$)



Problem 5

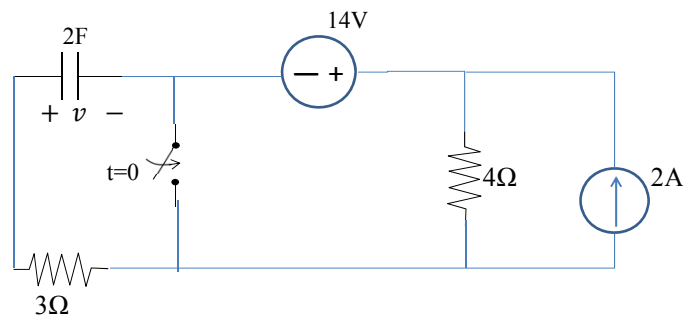
Find $i(t)$ and $v(t)$ for $t > 0$ in the following circuit if $i(0) = 20\text{A}$.

($i(1) = 0.604\text{A}$)

**Problem 6**

Calculate the capacitor voltage for $t < 0$ and $t > 0$ in the following circuit

($V(1) = 5.078\text{V}$)



Problem 7

Consider the following circuit. Find $i(t)$ for $t < 0$ and $t > 0$.

$$(i(1) = 0.497\text{A})$$

