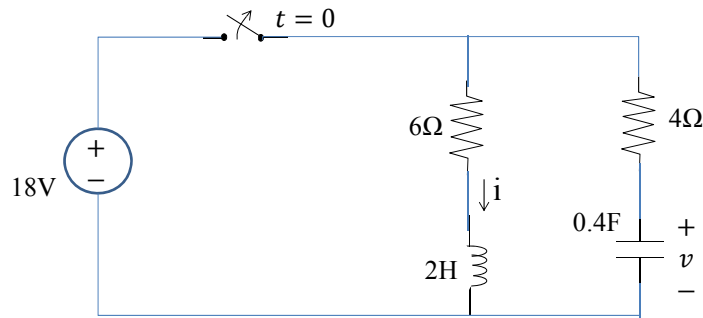


Problem 1

For the following circuit, find:

- (a) $i(0^+)$ and $v(0^+)$,
- (b) $dv(0^+)/dt$,
- (c) $i(\infty)$ and $v(\infty)$.

**Problem 2**

The current in an RLC circuit is described by

$$\frac{d^2i}{dt^2} + 10\frac{di}{dt} + 25i = 0$$

If $i(0) = 3\text{A}$ and $di(0)/dt = 1\text{A/s}$, find $i(t)$ for $t > 0$

Problem 3

A branch voltage in an RLC circuit is described by

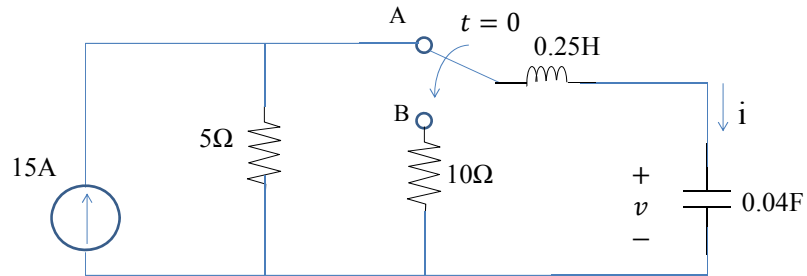
$$\frac{d^2v}{dt^2} + 4\frac{dv}{dt} + 8v = 48$$

If the initial conditions are $v(0) = 4\text{V}$, $dv(0)/dt = -20\text{V/s}$, find $v(t)$.

Problem 4

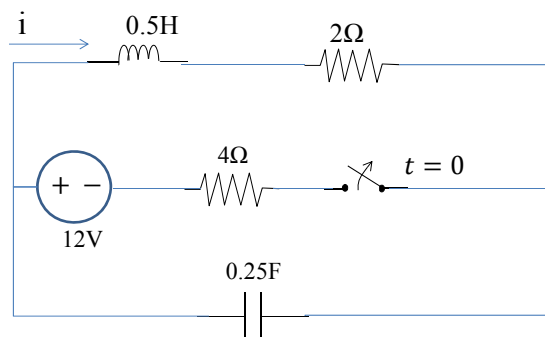
In the following circuit, the switch instantaneously moves from position A to B at $t=0$. Find $v(t)$ for all $t \geq 0$.

$$(v(1)=5.546\text{V})$$

**Problem 5**

The switch in the following circuit has been closed for a long time but is opened at $t=0$. Determine $i(t)$ for $t > 0$.

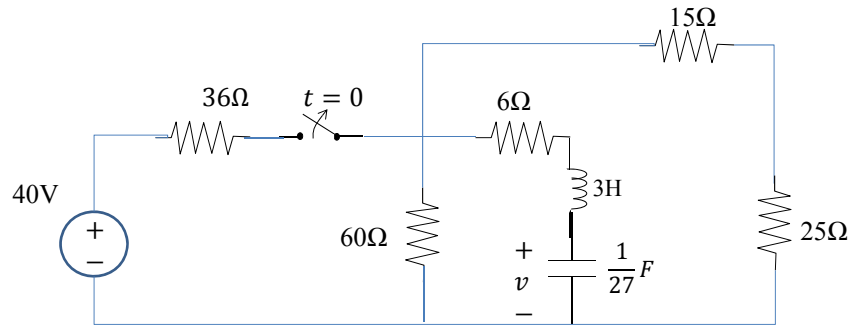
$$(i(1)=0.133\text{A})$$



Problem 6

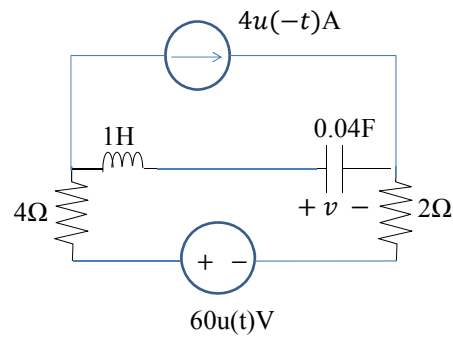
Calculate $v(t)$ for $t > 0$ in the following circuit.

$$(v(1) = 6.622\text{V})$$

**Problem 7**

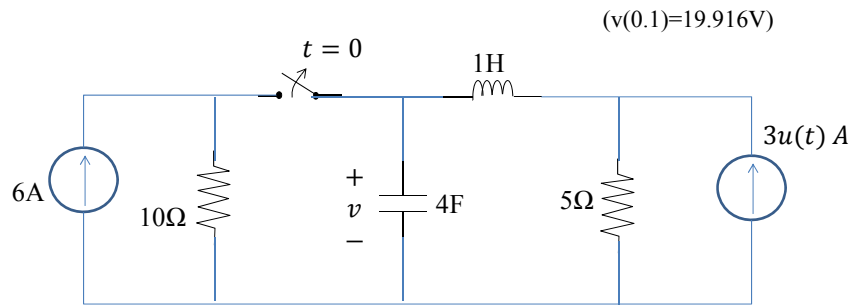
For the following circuit, find $v(t)$ for $t > 0$.

$$(v(1) = 65.107\text{V})$$

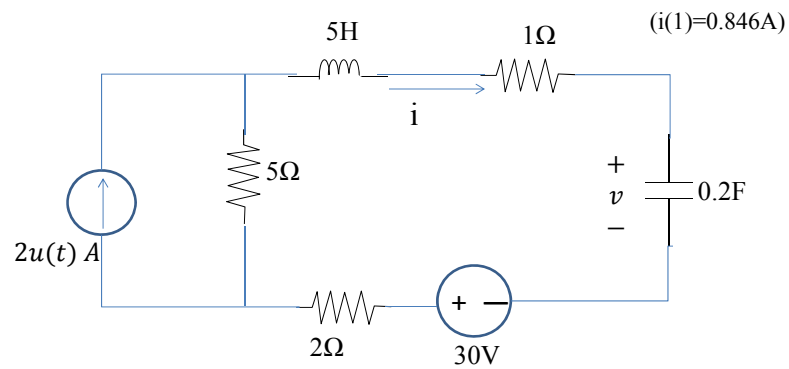


Problem 8

Find $v(t)$ for $t > 0$ in the following circuit.

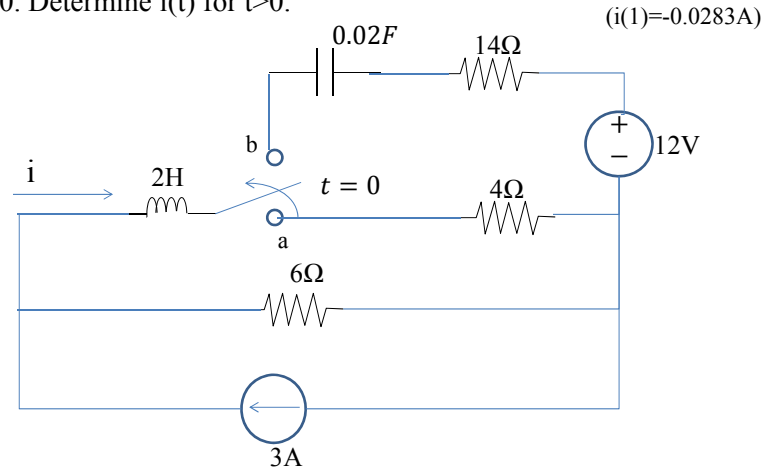
**Problem 9**

Obtain $v(t)$ and $i(t)$ for $t > 0$ in the following circuit.



Problem 10

The switch in the following circuit is moved from position a to b at $t=0$. Determine $i(t)$ for $t>0$.

**Problem 11**

Given the network in the following circuit, find $v(t)$ for $t>0$.

