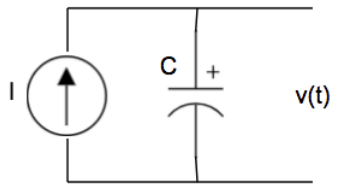
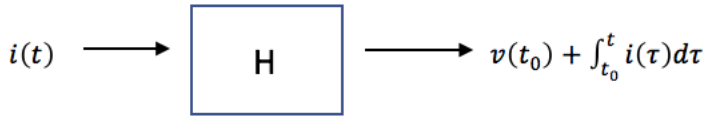
ECE210 / ECE211 - Homework 04
Due date: Wednesday, September 26, 2018.

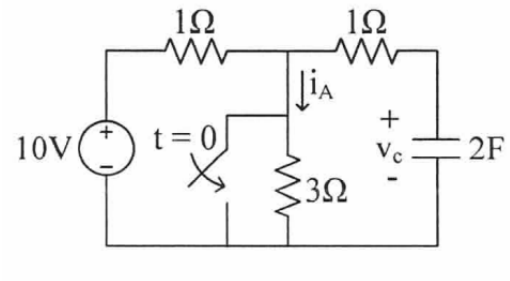
1. In the circuit shown below, let $C = 1\text{F}$ and $v(0^-) = 1\text{V}$. Determine $v(t)$ for $t > 0$ and sketch it.



2. Suppose we have the system below. Show that this system is zero-state linear.



3. The circuit shown below has been in DC steady state before the switch closes at $t = 0\text{s}$.
   (a) Obtain $i_A(0^-)$, $i_A(0^+)$, $v_c(0^-)$ and $v_c(0^+)$.
   (b) Determine $i_A(t)$ for $t > 0$, and sketch it for $t > -1$.
   (c) Determine $v_c(t)$ for $t > 0$ and sketch it for $t > -1$.



4. The circuit shown below has been in DC steady state before the switch closes at $t = 0$.
   (a) Obtain $i(0^-)$, $i(0^+)$, $v(0^-)$ and $v(0^+)$.
   (b) Determine $i(t)$ for $t > 0$, and sketch it for $t > -1$.
   (c) Determine $v(t)$ for $t > 0$ and sketch it for $t > -1$.