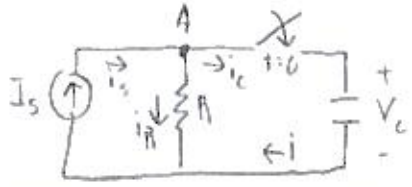
HW1 1.




KCL on A $-i_s + i_R + i_c = 0$ $\quad i_R + i_c = i_s \quad \frac{V_c}{R} + C\frac{dv}{dt} = i_s$

$\frac{V_c}{RC} + \frac{dv}{dt} = \frac{i_s}{C} \quad \frac{dv}{dt} = \frac{i_s}{C} - \frac{V_c}{RC} \quad dv = \left(\frac{i_s}{C} - \frac{V_c}{RC}\right)dt$

$\frac{1}{RC}\,dv =$

$V_c(t) = i_s R + (V_0 - i_s R)e^{-t/RC}$

$i(t) = \left(I_s - \frac{V_0}{R}\right)e^{-t/RC}$

$V_s \to I_s$

$L \to C$

$R \to \frac{1}{R}$

$I_0 \to V_0$

$\frac{1}{RC} + \frac{dv}{dt} = \frac{i_s}{C}$

$V_c$

$\frac{1}{RC}\,dt = \frac{i_s}{C}\,V_c$

$\frac{dv}{V_c}$

$\frac{2}{3} \cdot 16 \quad \frac{2}{12} \cdot 16$

$\frac{1}{RC} \cdot \frac{dv}{dt} \cdot V_c(t)$

$\frac{1}{2} \cdot \frac{1}{4}$