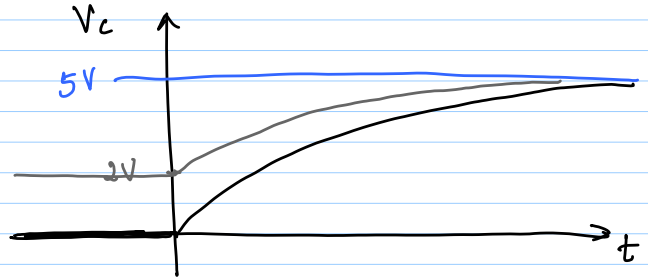
12-3-15

Lec 24



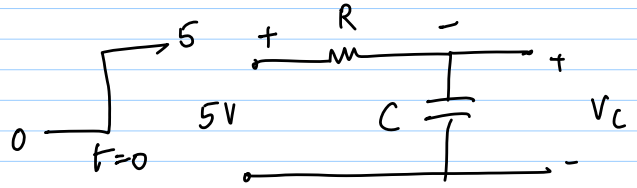
$V_c(0) = 0$

$\text{slope}(t=0) = \frac{5}{RC}$

$V_c(0) = 2V$

$\text{slope}(t=0) = \frac{3}{RC}$

$V_c(0^+) = V_c(0^-)$

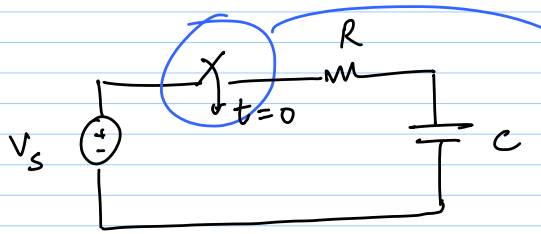


$V_R(0^+) = 3V$

$I_R(0^+) = \frac{3}{R}$

$\frac{dV_c}{dt}(0^+) = \frac{3}{RC}$

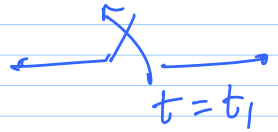
$$V_c(t) = V_s + \left(V_c(0) - V_s\right) \exp\left(\frac{-t}{RC}\right)$$

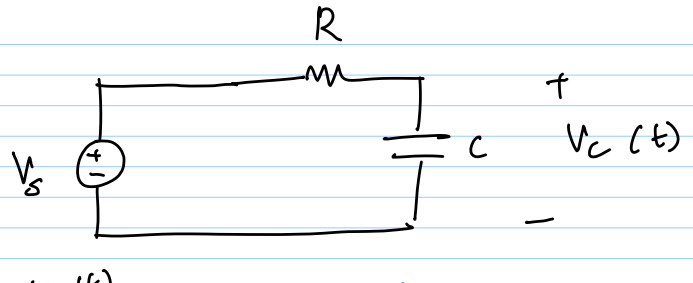


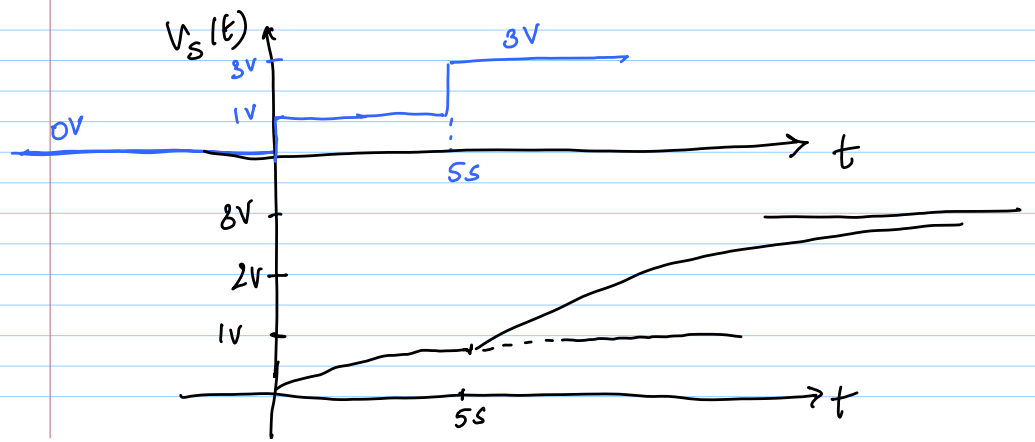
ideal switch 'S'

S off o.c

S on s.c



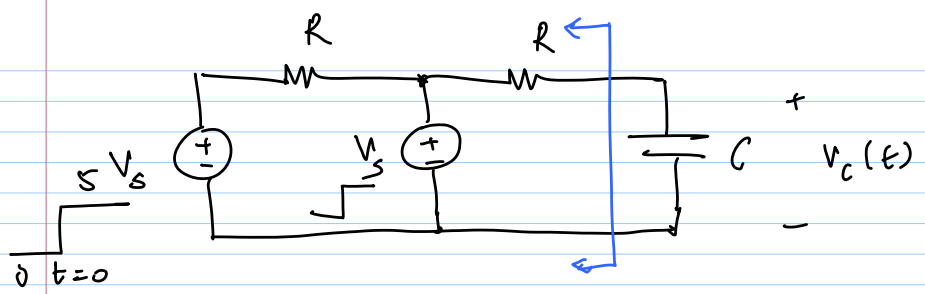




$V_c(t) = 0 \quad , \quad t < 0$

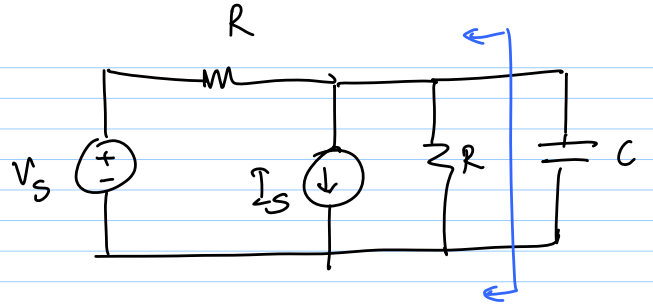
$V_c(t) = 1V\left(1 - \exp(-t/RC)\right) \quad ; 0 < t < 5_s$

$V_c(t) = 3 + \left(V_c(5) - 3V\right)\exp\left(\frac{-(t-5)}{RC}\right) \quad ; t > 5_s$

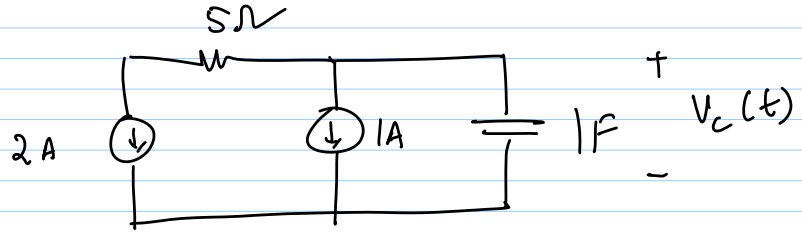


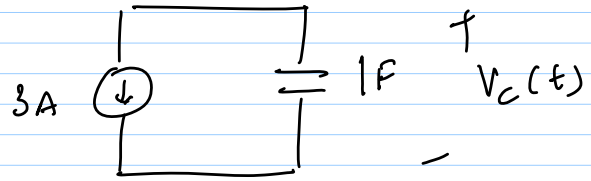
V_{th} + R_{th}

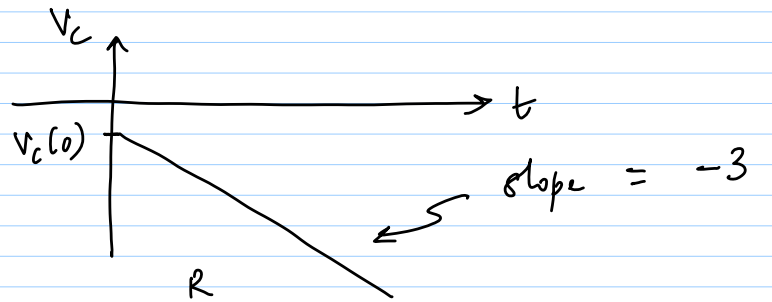
R_{th} =



V_{th}, R_{th}.







I_R, V_R, I_C
same time const. RC
same homog. eq.