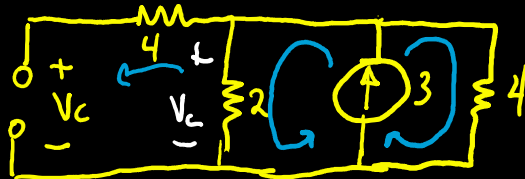


Example of 1st Order Ckt w/ Final Conditions

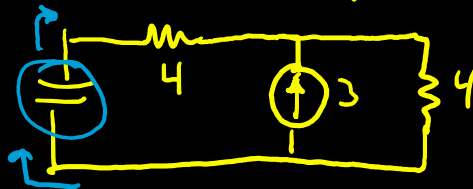


① $t < 0 \quad V_c(t=0^-)$
 $40V \sim$



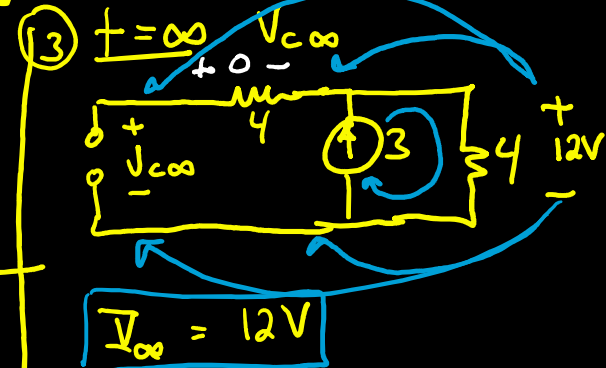
$$V_c = 3 \cdot \frac{8}{6} = \boxed{4V}$$

② $t > 0 \quad \tau = R_{eq} C$



$$R_{eq} = 8$$

$$\tau = 1 \cdot 8 = \boxed{8s}$$



④ $V_c(t) = V_{\infty} + (V_0 - V_{\infty}) e^{-t/\tau}$
 $= 12 - 8 e^{-t/8} V$

⑤ $i = C V_c'$
 $= (-8)(-\frac{1}{8}) e^{-t/8} A$
 $= e^{-t/8} A, t > 0$

$V_4 = -i \cdot 4$

$$i(t) = \begin{cases} 0, & t < 0 \\ e^{-t/8} A, & t \geq 0 \end{cases}$$