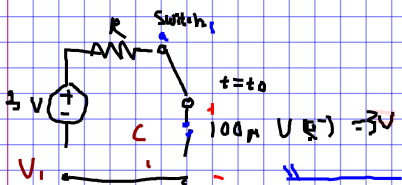


3) Red.

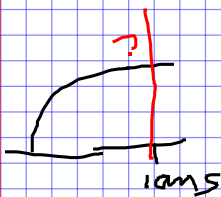
3.1)

$t < t_0$



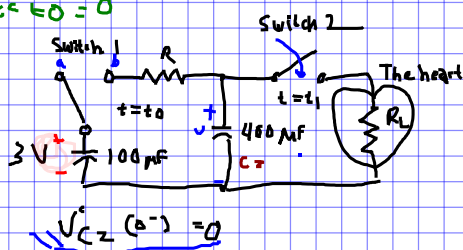
$t > t_0$

$t > t < t_1 = t_0 + 10 \mu s = 10 \mu s$

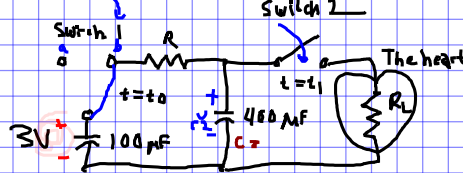


3.2

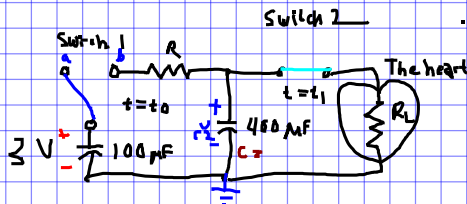
$t < t_0 = 0^-$



$t_0 < t_1 < 1$



$$V_{C2}(t \approx 10 \mu s) = V_{C1} = 3V$$



$$V_{C2}(t_1) = 3V$$

$$V_{C2}(t \approx 1) = 0V$$

$$V(t) = V(\infty) + [V(0) - V(\infty)] e^{-t/\tau}$$

$$\tau_2 = R_2 C_2 = RC_2 = (10 m\Omega)(400 nF) = 4.000 \mu s$$

$$1/\tau_2 = 250000$$

$$\tau_1 = R_1 C_1 = RC_1 = (10 m\Omega)(100 nF) = 1.00 \mu s$$

$$\tau_3 = R_3 C_2 = (1 k\Omega)(400 nF) = 400 \mu s$$

$$1/\tau_3 = 25$$

$$5\tau_3 = 2s$$

$$2.5\tau_3 = 1s$$

Carga

$$V_{C2} = 3V + (0V - 3V)e^{-t/\tau_2}$$

$$= 3 - 3e^{-250000t}$$

Poscarga

$$V_{C2} = 0V + (3V - 0V)e^{-t/\tau_3}$$

$$= 3e^{-2.5t}$$

$$V(t) = \begin{cases} 3 - 3e^{-250000t} & t_1 \leq t \leq t_1 \\ 3e^{-2.5t} & t_1 < t \leq 1 \end{cases}$$

