① $V_c(t) = V(1 - e^{-\frac{t}{RC}})$

$V_c(RC) = V(1 - e^{-1}) = V(1 - \frac{1}{e}) \approx 0.63212 \times V$

$RC \approx 0.1$ seconds $\qquad \frac{0.1}{200k} = 500 \times 10^{-9}$

$V = 1V$, $R = 200k\Omega$, $C = 500nF$

②

Graph 1) $V_1 = 2$, $V_2 = 8$ $\qquad (8-2)0.632 + 2 \approx 5.8$

$V(RC) = 5.8 \qquad \gamma \approx 0.002$

$C = 500nF$

Graph 2) $V_1 = 10$, $V_2 = 3$ $\qquad (3-10)0.632 + 10 \approx 5.6$

$\gamma \approx 0.04 \qquad C = 10uF$

Graph 3) $V_1 = 2,\ V_2 = -6$

$\gamma = 0,008$

$C = 2\,uF$

$(-6-2)0,632 + 2 \approx -3,05$