

$$v_c(t) = e^K e^{-t/RC} = A e^{-t/RC}$$

Kondisi awal: $t=0 \rightarrow v_c(0) = 10 \text{ V}$

$$A e^{-0/RC} = 10 \rightarrow A = 10$$

Solusi = $v_c(t) = 10 e^{-t/RC}, t \geq 0$

Verifikasi:
Analisis:

* $t=0, v_c(0) = 10 e^{-0/RC} = 10 \checkmark$

* $t > 0, v_c(t) = 10 e^{-t/RC}$

$$v_c(t) = -RC \frac{dv_c(t)}{dt} \quad \left\{ \begin{array}{l} \frac{dv_c(t)}{dt} = -10 \left(\frac{1}{RC} \right) e^{-t/RC} \\ = -\frac{1}{RC} [10 e^{-t/RC}] \\ = -\frac{1}{RC} v_c(t) \end{array} \right.$$

$$\frac{dv_c(t)}{dt} = -\frac{1}{RC} v_c(t)$$