

$$\int \frac{dx(t)}{x(t)} = - \int 2 dt$$

$$\ln [x(t)] = -2t + K$$

$$x(t) = e^{-2t+K} = e^K e^{-2t} = A e^{-2t}$$

$$t=0 \rightarrow x(0) = A e^0 = A = 10 \text{ (kondisi awal)}$$

Jadi solusi analitik:

$$x(t) = 10 e^{-2t}$$

(exact) (closed form)
(akurat)

check :

- * Kondisi awal : $x(0) = 10 e^0 = 10 \checkmark$
- * $\frac{dx(t)}{dt} = -2(10 e^{-2t}) = -2x(t) \checkmark$