

dc

$$\frac{dI}{dt} = \frac{I(19-I)}{18}$$

$$\int \frac{1}{I(19-I)} \frac{dI}{dt} dt \rightarrow \int \frac{-1}{19} \frac{dI}{I} dt$$

$$\frac{A}{I} + \frac{B}{19} = \frac{1}{I(19)}$$

$$A(19) + BI = 1$$

$$\int \frac{1}{19} \left[-\frac{1}{I} + \frac{1}{19} \right] dI$$

~~A+B=0~~

$$A = -\frac{1}{19}, B = \frac{1}{19}$$

$$\frac{1}{19} \ln \left| \frac{I-19}{I} \right| = \frac{-t}{R} + C$$

$$\frac{I-19}{I} = Ae^{-\frac{19t}{R}}$$

$$-19 = I Ae^{\frac{-19t}{R}} - I$$

$$I(Ae^{\frac{-19t}{R}} - 1)$$

~~$$I = e^{\frac{-19t}{R}}$$~~

$$I = \frac{-19}{(Ae^{\frac{-19t}{R}} - 1)}$$

$$A = -K$$

$$= \frac{-19}{A-1}$$