

$$\frac{dN(t)}{dt} - \lambda N(t) - \nu = 0$$

$$I = e^{-\lambda \int dt} = e^{-\lambda t}$$

$$\Rightarrow e^{-\lambda t} \frac{dN(t)}{dt} - \lambda e^{-\lambda t} N(t) = \nu e^{-\lambda t}$$

$$\Rightarrow \frac{d}{dt} (N(t) e^{-\lambda t}) = \nu e^{-\lambda t}$$

$$\underline{N(t)} = \underline{N_0} e^{\lambda t} + \frac{\nu}{\lambda} (e^{\lambda t} - 1)$$

$$\begin{aligned} \text{A } f(x) &= N(t) - N_0 e^{x t} \\ &\quad - \frac{\nu}{\lambda} (e^{x t} - 1) \end{aligned}$$

$$f(x) = 0 \text{ for } x$$