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

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

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

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

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

$$f(x) = N(t) - N_0 e^{xt} - \frac{\nu}{\lambda}\left(e^{xt} - 1\right)$$

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