$$i(t) = e^{-\frac{R}{L}t}\,\frac{V}{L}\left(\frac{L}{R}\int e^{u}\,du\right)$$

$$u = \frac{R}{L}t$$

$$i(t) = e^{-\frac{R}{L}t}\,\frac{V}{L}\left(\frac{L}{R}e^{u} + C\right)$$

$$i(t) = e^{-\frac{R}{L}t}\,\frac{V}{L}\left(\frac{L}{R}e^{\frac{R}{L}t} + C\right)$$

1

$$i(t) = e^{-\frac{R}{L}t}\,\frac{V}{\cancel{L}}\cdot\frac{\cancel{L}}{R}\cdot e^{\frac{R}{L}t} + e^{-\frac{R}{L}t}\,\frac{V}{L}\cdot C$$

$$\boxed{i(t) = \frac{V}{R} + \frac{VC}{L}\cdot e^{-\frac{R}{L}t}}$$

Condição inicial $\rightarrow i(0) = 0$

$$i(t) = \frac{V}{R} + \frac{VC}{L}\cdot e^{-\frac{R}{L}t} \rightarrow 0 = \frac{V}{R} + \frac{VC}{L}\overbrace{e^{-\frac{R}{L}\cdot 0}}^{1}$$

$$0 = \frac{V}{R} + \frac{VC}{L}$$

$$\frac{\cancel{V}C}{L} = -\frac{\cancel{V}}{R} \rightarrow C = -\frac{\frac{1}{R}}{\frac{L}{1}}$$

$$C = -\frac{1}{R} \cdot \frac{L}{1} \rightarrow \boxed{C = -\frac{L}{R}}$$

$$i(t) = \frac{V}{R} + \frac{VC}{L} \cdot e^{-\frac{R}{L}t}$$

$$i(t) = \frac{V}{R} + \frac{V}{\cancel{L}}\left(-\frac{\cancel{L}}{R}\right) \cdot e^{-\frac{R}{L}t}$$

$$i(t) = \frac{V}{R} - \frac{V}{R} \cdot e^{-\frac{R}{L}t}$$

$$\boxed{i(t) = \frac{V}{R}\left(1 - e^{-\frac{R}{L}t}\right)}$$

Solução particular

Continuação do exemplo 2.

$$y(x) = e^{\frac{x^2}{2}} \cdot \left(-e^{-\frac{x^2}{2}} + C\right)$$

$$y(x) = -1 + e^{\frac{x^2}{2}} \cdot C$$

$$\boxed{y(x) = -1 + C \cdot e^{\frac{x^2}{2}}}$$ Solução Geral

Condição inicial $\rightarrow y(0) = 3$

$$y(x) = -1 + C \cdot e^{\frac{x^2}{2}}$$

$$3 = -1 + C \cdot \cancel{e^{\frac{0^2}{2}}} \rightarrow 1$$

$$3 = -1 + C$$

$$\boxed{C = 4}$$

/ /

$$y(x) = -1 + C \cdot e^{\frac{x^2}{2}} \rightarrow C = 4$$

$$y(x) = -1 + 4 \cdot e^{\frac{x^2}{2}}$$

Solução Particular

Observação

$$u = -\frac{x^{2}}{2}^{-1}$$

$$du = -\frac{\cancel{2}x^{2-1}}{\cancel{2}}dx$$

$$du = -x^{1}dx$$

$$\boxed{du = -x\,dx}$$

$$N = 3y^2x^2 + K'(y)$$

$$3x^2y^2 = 3y^2x^2 + K'(y)$$

$$K'(y) = 0$$

$$\frac{dK}{dy} = 0$$

$$\int dK = \int 0\,dy$$

$$\boxed{k(y) = C_1}$$

$$u(x,y) = x + x^2y^3 + \boxed{k(y)}$$

$$u(x,y) = \underline{x + x^2y^3 + C_1}$$

solução
Geral
com const.

$$u(x,y) = C$$

$$x + x^2y^3 + C_1 = C$$

$$\lambda$$

$$x + x^2y^3 = \overbrace{C - C_1}$$

$$x + x^2y^3 = \lambda$$

$$x^2y^3 = \lambda - x$$

$$y^3 = \frac{\lambda}{x^2} - \frac{\cancel{x}}{x^{\cancel{2}}}$$

$$\sqrt[3]{y^{3}} = \sqrt[3]{\frac{2}{x^2} - \frac{1}{x}}$$

$$\boxed{y = \sqrt[3]{\frac{2}{x^2} - \frac{1}{x}}}$$