

$$\begin{aligned}
 &> \text{restart} \\
 &> \text{Solucion} := y(x) = C_1 \cdot \exp(x) + C_2 \cdot x \cdot \exp(x) \\
 &\quad \text{Solucion} := y(x) = C_1 e^x + C_2 x e^x \tag{1}
 \end{aligned}$$

$$\begin{aligned}
 &> \text{Sistema} := \text{diff}(\text{Solucion}, x), \text{diff}(\text{Solucion}, x\$2) : \text{Sistema}_1; \text{Sistema}_2 \\
 &\quad \frac{d}{dx} y(x) = C_1 e^x + C_2 e^x + C_2 x e^x \\
 &\quad \frac{d^2}{dx^2} y(x) = C_1 e^x + 2 C_2 e^x + C_2 x e^x \tag{2}
 \end{aligned}$$

$$\begin{aligned}
 &> \text{Parametro} := \text{solve}(\{\text{Sistema}\}, \{C_1, C_2\}) : \text{Parametro}_1; \text{Parametro}_2 \\
 &\quad C_1 = - \frac{\frac{d^2}{dx^2} y(x) - 2 \left( \frac{d}{dx} y(x) \right) + x \left( \frac{d^2}{dx^2} y(x) \right) - x \left( \frac{d}{dx} y(x) \right)}{e^x} \\
 &\quad C_2 = \frac{\frac{d^2}{dx^2} y(x) - \left( \frac{d}{dx} y(x) \right)}{e^x} \tag{3}
 \end{aligned}$$

$$\begin{aligned}
 &> \text{Ecuacion} := \text{simplify}(\text{subs}(C_1 = \text{rhs}(\text{Parametro}_1), C_2 = \text{rhs}(\text{Parametro}_2), \text{Solucion})) \\
 &\quad \text{Ecuacion} := y(x) = - \left( \frac{d^2}{dx^2} y(x) \right) + 2 \left( \frac{d}{dx} y(x) \right) \tag{4}
 \end{aligned}$$

$$\begin{aligned}
 &> \text{EcuacionFinal} := \text{lhs}(\text{Ecuacion}) - \text{rhs}(\text{Ecuacion}) = 0 \\
 &\quad \text{EcuacionFinal} := y(x) + \frac{d^2}{dx^2} y(x) - 2 \left( \frac{d}{dx} y(x) \right) = 0 \tag{5}
 \end{aligned}$$

$$\begin{aligned}
 &> \text{Solucion} \\
 &\quad y(x) = C_1 e^x + C_2 x e^x \tag{6}
 \end{aligned}$$

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