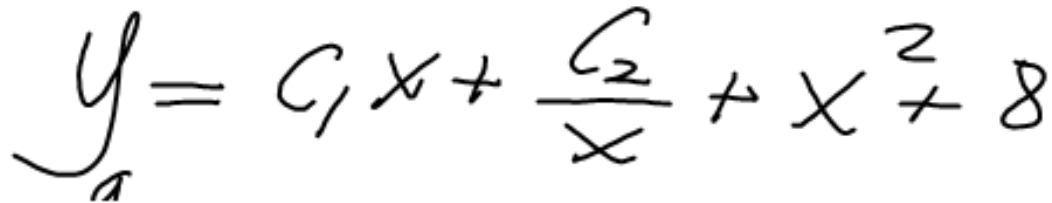


> restart

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$$y = C_1 x + \frac{C_2}{x} + x^2 + 8$$

> *SolucionGeneral* := $y(x) = C_1 \cdot x + \frac{C_2}{x} + x \cdot 2 + 8$

$$\text{SolucionGeneral} := y(x) = C_1 x + \frac{C_2}{x} + x^2 + 8 \quad (1)$$

> *Sistema* := $\text{diff}(\text{SolucionGeneral}, x), \text{diff}(\text{SolucionGeneral}, x^2) : \text{Sistema}_1; \text{Sistema}_2;$

$$\frac{d}{dx} y(x) = C_1 - \frac{C_2}{x^2} + 2x$$

$$\frac{d^2}{dx^2} y(x) = \frac{2C_2}{x^3} + 2 \quad (2)$$

> *Parametro* := $\text{solve}(\{\text{Sistema}\}, \{C_1, C_2\}) : \text{Parametro}_1; \text{Parametro}_2;$

$$C_1 = \frac{d}{dx} y(x) + \frac{1}{2} \left(\frac{d^2}{dx^2} y(x) \right) x - 3x$$

$$C_2 = \frac{1}{2} \left(\frac{d^2}{dx^2} y(x) \right) x^3 - x^3 \quad (3)$$

> *Ecuacion* := $\text{simplify}(\text{subs}(C_1 = \text{rhs}(\text{Parametro}_1), C_2 = \text{rhs}(\text{Parametro}_2), \text{SolucionGeneral}))$

$$\text{Ecuacion} := y(x) = x \left(\frac{d}{dx} y(x) \right) + \left(\frac{d^2}{dx^2} y(x) \right) x^2 - 3x^2 + 8 \quad (4)$$

> *EcuacionElegante* := $-\left(\text{lhs}(\text{Ecuacion}) - \left(x \left(\frac{d}{dx} y(x) \right) + \left(\frac{d^2}{dx^2} y(x) \right) x^2 \right) \right) =$
 $-\left(\text{rhs}(\text{Ecuacion}) - \left(x \left(\frac{d}{dx} y(x) \right) + \left(\frac{d^2}{dx^2} y(x) \right) x^2 \right) \right)$

$$\text{EcuacionElegante} := -y(x) + x \left(\frac{d}{dx} y(x) \right) + \left(\frac{d^2}{dx^2} y(x) \right) x^2 = 3x^2 - 8 \quad (5)$$

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