

GUIA 2 ECUACIONES DIFERENCIALES

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$$x''(t) = 13 \cos(t)$$

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$$x'''(t) = 3t^3 - 45t + 2$$

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$$x' + 1 = x^2$$

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$$xx' + t = 0$$

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$$x' \operatorname{ctg}(t) + x = 2$$

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$$tx' + x = x^2$$

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$$x' = -\frac{tx}{t+1}$$

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$$x' = 10^{x+t}$$

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$$x' = \frac{x(dt-c)}{t(a-bx)}, \quad \text{ecuación Lotka - Volterra.}$$

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$$x' = \frac{x}{t} + \frac{t}{x}$$

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$$x + 2 = (2t + x - 4)x'$$

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$$tx' - x = t \operatorname{tg}\left(\frac{x}{t}\right)$$

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$$(x' + 1) \ln \frac{x+t}{t+3} = \frac{x+t}{t+3}$$

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$$x' = 2 \frac{x+2}{t+x-1}$$

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$$tx' - 2x = 2t^4$$

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$$xt + e^t = tx'$$

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$$tx' + (t+1)x = 3t^2e^{-t}$$

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$$x' + 2x = x^2e^t$$

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$$x' = x \operatorname{tg}(t) + x^4 \cos(t)$$

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$$t^2x' + tx + t^2x^2 = 4$$

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$$x' = (x + 2t - 3)^2$$

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$$x' - 2tx - x^2 = 0$$

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$$x' = \frac{x}{3t - x^2}$$

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$$(x')^2 - 2xx' = -x^2(e^t - 1)$$

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$$(x')^2 - 2tx' = t^2 - 4x$$

Indicación: Después de la explicitación de x' , se hace la substitución $x = y^2$.

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$$t(x')^2 = x(2x' - 1)$$

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$$(x')^3 = 3(tx' - x)$$

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$$x''' = \ln(x)$$

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$$x'' \cos(x) + (x')^2 \sin(x) = x'$$

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$$2x''' - 3(x')^2 = 0$$

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$$(x''')^2 - 2x'x'' + 1 = 0$$

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$$t^2xx'' = (x - tx')^2$$

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$$x'' + (x^2 - 1)x' + x = 0$$

(ecuación de Van der Pol).