

ED	{	Ordinarias	incógnita $y(x)$ $\uparrow$ v.i. $x(t)$ $z(y)$	$\frac{d^2 y}{dx^2} + 5 \frac{dy}{dx} + 6y = 2x^2 + 4e^{3x}$
		Cap I, II, & III		EDO(2) L NH CC.
	{	en Derivadas Parciales	incógnita $z(x, y)$ $\searrow$ v.i. $y(x, t)$	$\frac{\partial^2 z}{\partial x^2} + \frac{\partial^2 z}{\partial x \partial y} + 3 \frac{\partial^2 z}{\partial y^2} = 7$
		Cap IV		EDP

$\mathbb{E}DOL \longrightarrow$ Sol. gral única
Sol. part. ∞

$\mathbb{E}DONL \longrightarrow$ Sol. gral única
Sol. part ∞
Sol. Sing. $\#$

$\mathbb{E}DP \longrightarrow$ Sol. gral $\#$
Sol. part. ∞

Clases de Maple J205A.

27 ago.

10 sep

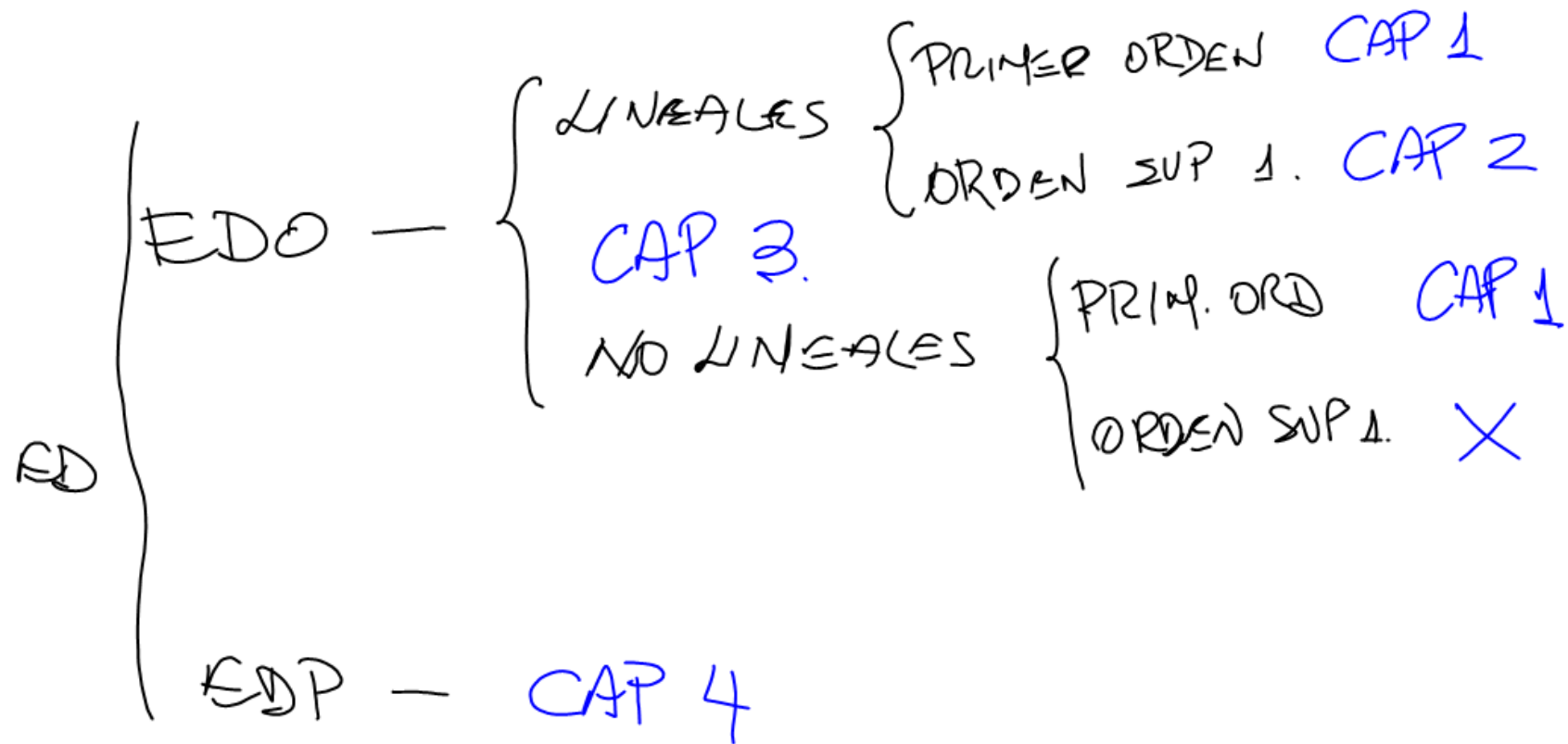
24 sep.

8 oct.

22 oct.

5 nov.

19 nov.



Ecuaciones Diferenciales Ordinarias
Serán de Primer Orden

Ecuación solo tiene una derivada
de primer orden

$$\Rightarrow M(x, y) + N(x, y) \frac{dy}{dx} = 0 \quad \text{EDONL(1)} \left. \begin{array}{l} \text{Sol. graf} \\ \text{tiene una} \\ \text{sólo a constante.} \end{array} \right\}$$

$$\Rightarrow \frac{dy}{dx} + p(x)y = q(x) \quad \text{EDOL(1)}$$

$$M(x, y) + N(x, y) \frac{dy}{dx} = 0$$

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

$$\frac{dy}{dx} + p(x)y = q(x)$$

$$y = C_1 y_1 + f(x)$$

$$y'' + a_1 y' + a_2 y = Q(x) \quad y = C_1 y_1 + C_2 y_2 + f(x)$$

$$y''' + a_1 y'' + a_2 y' + a_3 y = Q(x) \quad y = C_1 y_1 + C_2 y_2 + C_3 y_3 + f(x)$$

$$y = C_1 e^{3x} + C_2 e^{-3x} + 4x^2$$

$$y' = 3C_1 e^{3x} - 3C_2 e^{-3x} + 8x$$

$$y'' = 9C_1 e^{3x} + 9C_2 e^{-3x} + 8$$

$$y'' - 9y = 8 - 36x^2$$

$$\text{EDO} \left\{ \begin{array}{l} L \rightarrow \text{EDO}(n)L \left\{ \begin{array}{l} \text{Homogéneas} \\ \text{No homogéneas} \end{array} \right. \\ \\ NL \rightarrow \text{EDO}(n)NL \end{array} \right.$$

$$\frac{d^2 y}{dx^2} + a_1 \frac{dy}{dx} + a_2 y = 0 \quad \text{Homogénea}$$

$$\frac{d^2 y}{dx^2} + a_1 \frac{dy}{dx} + a_2 y = Q(x) \quad \text{No Homogénea}$$

$$y = C_1 y_1 + C_2 y_2 + f(x)$$

$$y = C_1 y_1 + C_2 y_2$$



$$a_0(x) \frac{d^n y}{dx^n} + a_1(x) \frac{d^{n-1} y}{dx^{n-1}} + \dots + a_{n-1}(x) \frac{dy}{dx} + a_n(x) y = Q(x)$$

EDOL(n) NH cv

EDO (n) L
NL

$$\left[\underbrace{y^n \quad y^{n-1} \quad y^{n-2} \quad \dots \quad y'}_{} \quad y \right] = F(x)$$

$$a_0(x)y^n + a_1(x)y^{n-1} + \dots + a_{n-1}(x)y' + a_n(x)y = 0$$

$$y'' \cdot y - 6y' = 0 \quad \text{NL}$$

$$0 \leq \theta \leq 40^\circ \quad y'' + a \cos(y) = 0 \quad \text{NL}$$

$$y'' + a y = 0 \quad \text{L}$$

$$(y')^2 + 5y = 0 \quad \text{NL}$$

$$y' + \frac{4}{y} = 0 \quad \text{NL}$$