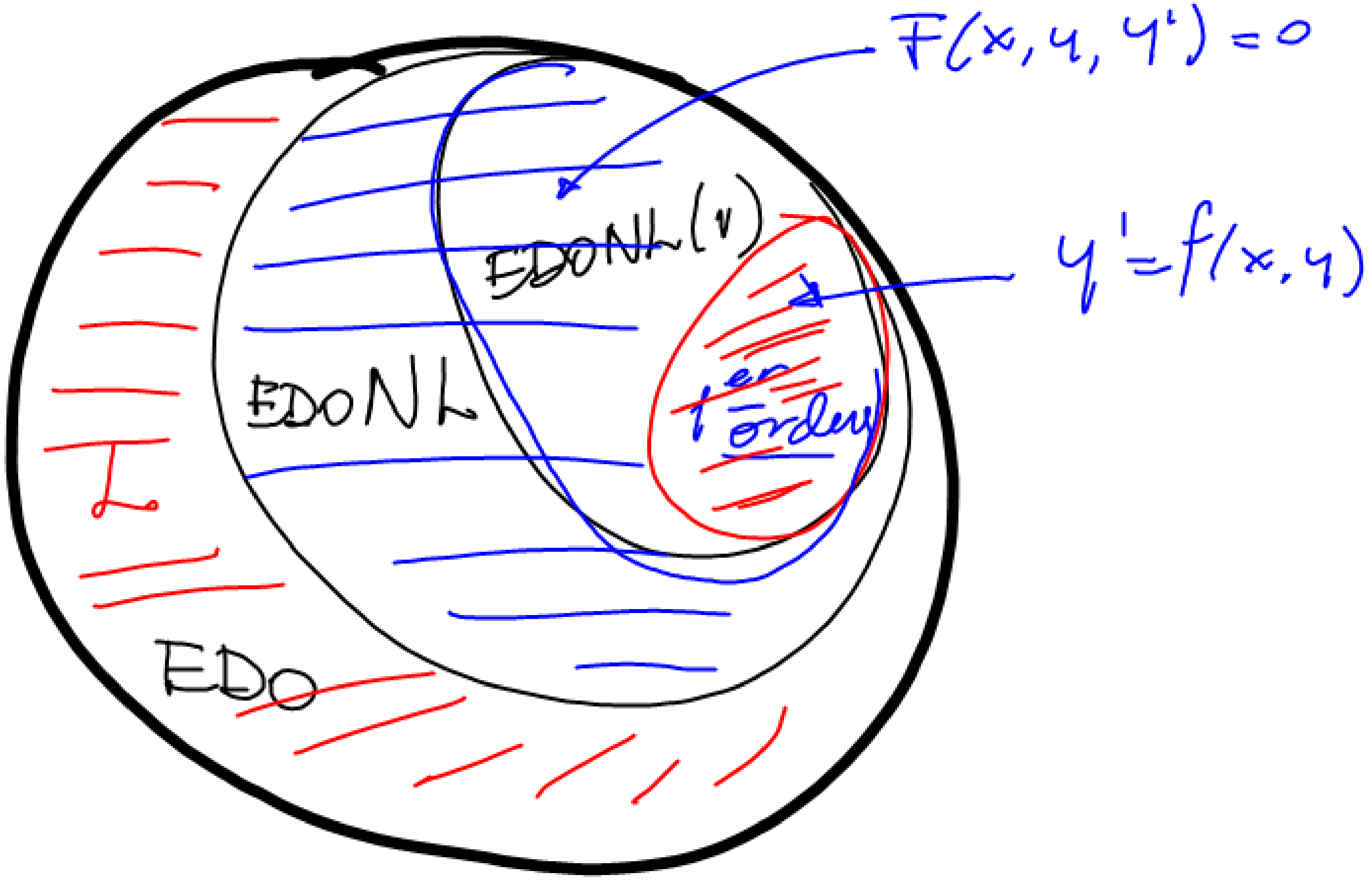

F(x, y, y') = 0
y' = f(x, y)
EDONL (1)
EDONL
1er orden
L
EDO

$$F(x, y, y', y'', \ldots, y^{(n)}) = 0$$

EDO(1)

$$F(x, y, y') = 0 \quad \begin{cases} L. \\ NL. \end{cases}$$

$$y' + p(x)\, y = q(x)$$

NL

$$\boxed{y' = f(x, y)}$$

$$y' = f(x,y)$$

FORMA GENERAL EDO(1)NL

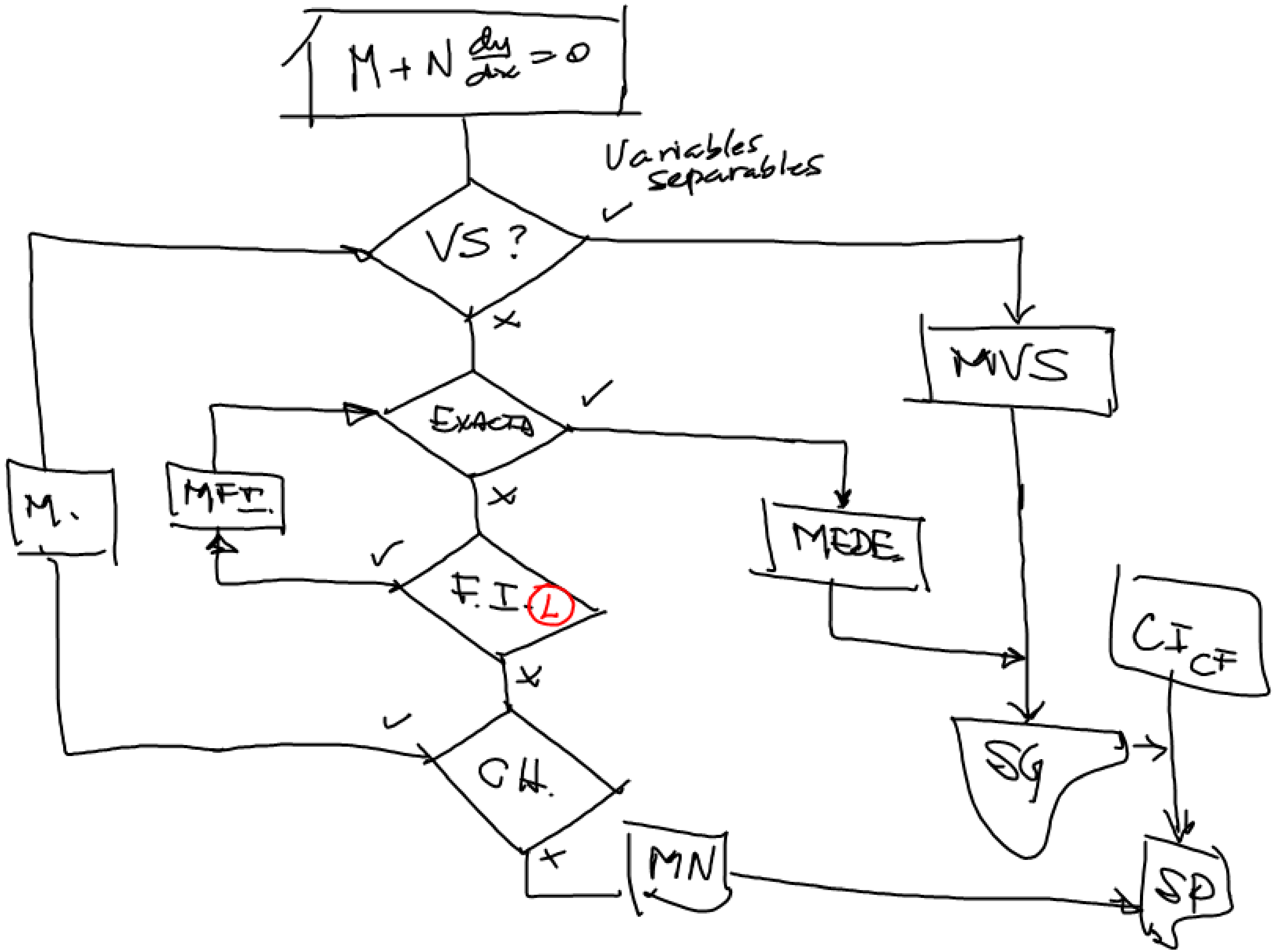
$$\frac{dy}{dx} = -\frac{M(x,y)}{N(x,y)}$$

$$N(x,y)\,dy = -M(x,y)\,dx$$

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

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

para Maple.


$M + N\frac{dy}{dx} = 0$
Variables separables
VS ?
MVS
EXACTA
MEDE
MFI.
M.
F.I. L
SG
CI_{CF}
CH.
MN
SP

Método de Variables Separables.

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

$$P(x)\cdot Q(y) + R(x)\cdot S(y)\frac{dy}{dx} = 0$$

$R(x)Q(y)$

$$\frac{P(x)\cdot \cancel{Q(y)}}{R(x)\cdot \cancel{Q(y)}} + \frac{\cancel{R(x)}\cdot S(y)}{\cancel{R(x)}\cdot Q(y)}\frac{dy}{dx} = 0$$

$$\frac{P(x)}{R(x)} + \frac{S(y)}{Q(y)}\frac{dy}{dx} = 0$$

EDO(1) NL

$$\frac{P(x)}{R(x)}dx + \frac{S(y)}{Q(y)}dy = 0$$

SG

$$\int\frac{P(x)}{R(x)}dx + \int\frac{S(y)}{Q(y)}dy = C_1 \qquad \boxed{F(x,y) = C_1}$$

$$(y^2+xy^2)\frac{dy}{dx}+(x^2-yx^2)=0$$

M N

$$(x^2-yx^2)+(y^2+xy^2)\frac{dy}{dx}=0$$

$$x^2(1-y)+(1+x)y^2\frac{dy}{dx}=0$$

$P(x)\Rightarrow x^2 \quad Q(y)\Rightarrow(1-y) \quad R(x)\Rightarrow(1+x) \quad S(y)=y^2$

$$SG\Rightarrow \int\frac{x^2}{x+1}dx+\int\frac{y^2}{1-y}dy=C_1$$

$$\int\frac{x^2}{x+1}dx=\int x\,dx-\int dx+\int\frac{dx}{x+1}$$

$$x^2 \mid x+1 \quad -x^2-x \quad x-1 \quad -x \quad +x+1 \quad 1$$

$$=\boxed{\frac{x^2}{2}-x+L(x+1)}$$

$$\int\frac{y^2}{-y+1}dy=-\int y\,dy-\int dy+\int\frac{dy}{1-y}$$

$$y^2 \mid -y+1 \quad -y^2+y \quad -y-1 \quad y \quad -y+1 \quad 1$$

$$=-\frac{y^2}{2}-y-L(y-1)$$

$$\boxed{SG\Rightarrow \frac{x^2}{2}-x+L(x+1)-\frac{y^2}{2}-y-L(y-1)=C_1}$$