EDO(2)LccH.

$$y(x) = c_1 e^{3x} + c_2 e^{-2x}$$

$$(m-2)\cdot(m+2) = 0$$

$$m^2 - 4 = 0$$

$$\frac{d^2y}{dx^2} - 4\frac{dy}{dx} = 0$$

$$y = c_1 e^{+2x} + c_2 e^{-2x}$$

$$\frac{d^2y}{dx^2} - 4y = 0$$

$$(m^2 - 4)y = 0$$

$$(m-2)(m+2)y = 0$$

$$(D-2)(D+2)\left[c_1 e^{2x} + c_2 e^{-2x}\right] = 0$$

$$(D-2)\left[2c_1 e^{2x} \cancel{- 2c_2 e^{-2x}} + 2c_1 e^{2x} \cancel{+ 2c_2 e^{-2x}}\right] = 0$$

$$(D-2)\left[4c_1 e^{2x}\right] = 0$$

$$\left[8\cancel{c_1} e^{2x} - \cancel{8} c_1 e^{2x}\right] = 0$$

$$0 \equiv 0$$

$P(D)$	$F(x)$
D	1
D^2	x
D^n	x^{n-1}
$(D-a_1)$	$e^{a_1 x}$
$(D-a_1)^2$	$xe^{a_1 x}$
$(D-a_1)^n$	$x^{n-1}e^{a_1 x}$
(D^2+b^2)	$\cos(bx)$ $\operatorname{sen}(bx)$

$$(D^2+4^2)\left[c_1\cos(4x)+c_2\,\text{sen}(4x)\right]=0$$

$$\left[-\cancel{16c_1}\cos(4x)-\cancel{16c_2}\,\text{sen}(4x)+\cancel{16c_1}\cos(4x)+\cancel{16c_2}\,\text{sen}(4x)\right]$$

$$=Q(x)\begin{cases} x^n \\ e^{ax} \\ \cos(bx) \\ \text{sen}(b) \end{cases}$$

$$y''' + 6y'' + 11y' + 6y = 0$$

$$m^3 + 6m^2 + 11m + 6 = 0$$

$$y_g(x) = C_1 e^{-3x} + C_2 e^{-2x} + C_3 e^{-x}.$$

$$y''' - 3y'' + 3y' - y = 0$$

$$y(0) = 1 \quad y'(0) = 2 \quad y''(0) = 3$$

EDO(2) L cc NH.

$$\frac{d^2y}{dx^2} + a_1 \frac{dy}{dx} + a_2 y = Q(x).$$

MÉTODO DEL OPERADOR DIFERENCIAL

$$y'$$

$$\dot{y}$$

$$\frac{dy}{dx}$$

operador diferencial D_x

$$Dy = \frac{dy}{dx} = y'(x) \Rightarrow \dot{y}$$

$$DDy \Rightarrow D^2 y \Rightarrow \frac{d^2y}{dx^2}$$

$$DD^n y \Rightarrow D^{n+1} y$$

$$DD^{-1} y \Rightarrow y \qquad D^{-1} D y = y + c$$