



LISTADO 5: EDO DE ORDEN SUPERIOR, PARTE 2

Parte 1: resuelva usando el método de los aniquiladores.

(a) $y'' + 3y' - 10y = e^{2x}$

(b) $y'' + 3y' - 10y = xe^{2x} + e^{-5x}$

(c) $y''' + 2y'' - y' - 2 = e^{3x}$

(d) $(D - 2)^3 y(x) = x \operatorname{sen}(3x) - xe^{2x}$

(e) $y''' + 3y'' + 3y' + y = x^3 e^{-x}$

(f) $y'' - 2y' + 8y = x + \cos(4x) + e^{3x} \operatorname{sen}(3x)$

Parte 2: resuelva los siguientes PVI:

(a) $y'' + y = \operatorname{sen}(2x) + \cos(2x), \quad y(\pi/3) = 1, \quad y'(\pi/3) = 0$

(b) $y''' - 3y'' + 3y' - y = x^2 \quad y(3/10) = 1, \quad y'(3/10) = 0, \quad y''(3/10) = 0$

(c) $y'' + 9y = x^3 + 6, \quad y(\sqrt{2}) = 1, \quad y'(\sqrt{2}) = 2$

(d) $y'' - 3y' + 2y = e^{3x} \cos(x), \quad y(2) = 0, \quad y'(2) = 0$

(e) $\frac{d^4 y}{dx^4} - \frac{d^3 y}{dx^3} = x + e^x, \quad y(0) = y'(0) = y''(0) = y'''(0) = 0$