



Tema 3: Otras Herramientas para la resolución de EDOs

Resultados: Experimentación Activa

01-E a) $y(x) = 8 - 4x + 8x^2 - \frac{47}{3}x^3 + \frac{95}{3}x^4 + \dots$

b) $y(x) = 2 + x + x^2 - \frac{1}{12}x^4 + \frac{1}{120}x^6 + \dots$

c) $y(x) = 5 - 2x - \frac{5}{2}x^2 + \frac{1}{3}x^3 - \frac{1}{6}x^4 + \dots$

d) $y(x) = 3 + 3x - \frac{1}{2}x^3 - \frac{1}{2}x^4 + \frac{1}{15}x^6 + \dots$

02-E a) $y(x) = 5 + 5x + \frac{1}{2}x^3 + \frac{5}{12}x^4 + \frac{1}{20}x^6 + \dots$

b) $y(x) = 3x + 2x^2 + \frac{3}{4}x^4 + \frac{2}{5}x^5 + \frac{3}{28}x^7 + \dots$

c) $y(x) = 10 + 2x - x^2 - 2x^3 - \frac{7}{4}x^4 - x^5 + \dots$

d) $y(x) = a_0 + a_1x - \frac{1}{2}a_1x^2 + \frac{1}{3}a_1x^3 - \frac{1}{4}a_1x^4 + \frac{1}{5}a_1x^5 + \dots$

03-E a) $\mathcal{L}\{f(t)\} = -\frac{2}{(s^2+1)^2} + \frac{8s^2}{(s^2+1)^3}$

b) $\mathcal{L}\{f(t)\} = \frac{s+5}{(s+5)^2+4}$

c) $\mathcal{L}\{f(t)\} = \frac{1}{(s-1)^2} - \frac{2}{s-4}$

d) $\mathcal{L}\{f(t)\} = \frac{s^2-9}{(s^2+9)^2}$

04-E a) $y(t) = \frac{3}{4}e^{3t} + \frac{1}{4}e^{-5t}$

b) $y(t) = \frac{1}{4} - \frac{1}{4}e^{-2t} + \frac{5}{2}te^{-2t}$

c) $y(t) = 1 + \cos 3t + \frac{2}{3}\sin 3t$

d) $y(t) = \frac{1}{2}e^{-2t} + \frac{1}{2}e^{6t}\cos 2t + \frac{3}{2}e^{6t}\sin 2t$

05-E a) $y(t) = \frac{6}{5}t^5 + \frac{5}{2} - \frac{1}{2}e^{-4t}$

b) $y(t) = 4t - \frac{1}{\sqrt{2}}\sin\sqrt{2}t + 6\cos\sqrt{2}t$

c) $y(t) = \frac{7}{65}\cos t + \frac{4}{65}\sin t - \frac{7}{65}e^{-2t}(\cos 2t - \sin 2t)$

d) $y(t) = -\frac{3}{50}\cos 3t - \frac{2}{25}\sin 3t + \frac{33}{10}e^{-t} + \frac{53}{50}te^{-t}$