Lembar Jawaban

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No.	Jawaban
1	y'' –3y'-4y = $3x^2$+2 menggunakan homogen $r^2 - 3r - 4$ $(r-4)(r+1)$ $r_1 = 4\,, r_2 = -1$ $C_1 e^{4x} + C_2 e^{-x}$ Non homogen $r(x) = 3x^2 + 2$ menggunakan polynomial Yp = $-\frac{3x^2}{4} + \frac{9x}{8} + 2$ Solusi : $C_1 e^{4x} + C_2 e^{-x} - \frac{3x^2}{4} + \frac{9x}{8} + 2$
3	y'' –3y'-4y = e^{2x} menggunakan homogen $r^2 - 3r - 4$ $(r-4)(r+1)$ $r_1 = 4\,, r_2 = -1$ $C_1 e^{4x} + C_2 e^{-x}$ Untuk Yp dipilih Yp = Ae^{2x} $y_p' = 2Ae^{2x}\; y_p'' = 4Ae^{2x}$ $4Ae^{2x} - 6Ae^{2x} - 4Ae^{2x} = e^{2x}$ $-6Ae^{2x} = e^{2x} \rightarrow A = 6$ Solusi : $C_1 e^{4x} + C_2 e^{-x} + 6e^{2x}$
5	y'' –3y'-4y = e^{-x} menggunakan homogen $r^2 - 3r - 4$ $(r-4)(r+1)$ $r_1 = 4\,, r_2 = -1$ $C_1 e^{4x} + C_2 e^{-x}$ Untuk Yp dipilih Yp = Ae^{-x} $y_p' = -Ae^{-x}\; y_p'' = Ae^{-x}$ $Ae^{-x} + 3Ae^{-x} - 4Ae^{-x} = e^{-x}$ $0Ae^{-x} = e^{-x} \rightarrow A = 0$ Solusi :

	$C_1e^{4x} + C_2e^{-x}$
7	y''+2y' = 3x²+2 homogen : $r^2 + 2r = 0$ $r(r + 2) = 0$ $r_1 = 0$ U $r_2 = -2$ $C_1 + C_2e^{2x}$ Non homogen $3x^2 + 2$ Yp = $yp = 3(A_2x^2 + A_1x + A_0)$ $y'p = 3(A_2x^2 + A_1x)$ $y''p = 3(A_2)$ $3A_2 + 6(A_2x + A_1)$ A_2=0 A_1=0 Yp = $3A_0$ Dan +2 Solusi umum : $C_1 + C_2e^{2x} + 3A_0 + 2$
9	y''+3y'-4y=3x²+2 homogen : $r^2 + 3r - 4$ $(r + 4)(r - 1)$ $r_1 = -4$ U $r_2 = 1$ $C_1e^{4x} + C_2e^{-x}$ Menggunakan non homogen $r(x) = 3x^2 + 2$ menggunakan polynomial Yp = $-\frac{3x^2}{4} + \frac{18x}{16} + 2$ Solusi : $C_1e^{4x} + C_2e^{-x} - \frac{3x^2}{4} + \frac{18x}{16} + 2$
11	y''+ y' = ex+ 3x $r^2 + r = 0$ $r(r + 1) = 0$ $r_1 = 0$ U $r_2 = -1$ $C_1 + C_2e^{-x} = 0$ Non homogen : $r(x) = e^x$ $yp = Ae^x = \frac{1}{2}e^x$ $y'p = Ae^x$ $y''p = Ae^x$

	$yp = 3(x^2 + A_0)$ *Solusi :* $yp = C_1 + C_2e^{-x} + \frac{1}{2}e^x + 3(x^2 + A_0)$
13	y'' –5y'+ 6y = 2e^x; y = 1, y' = 0 bilax = 0 Homogen : $r^2 - 5r + 6 = 0$ $(r-2)(r-3)$ $r_1 = 2$ U $r_2 = 3$ $yh = C_1e^{2x} + C_2e^{3x}$ Non Homogen : $yp = 2Ae^x$ $y'p = Ae^x + 2Ae^x$ $y''p = 2Ae^x + 2Ae^x$ $2Ae^x + 2Ae^x - 5Ae^x - 10Ae^x + 12Ae^x = e^x \rightarrow A = 1$ Solusi umum : $C_1e^{2x} + C_2e^{3x} + 2e^x$ Solusi khusus : $y = C_1e^{2x} + C_2e^{3x} + 2e^x \rightarrow 1 = C_1 + C_2$ $y' = 2C_1e^{2x} + 3C_2e^{3x} + e^x + 2e^x \rightarrow 0 = 2C_1 + 3C_2$ $3 = 3C_1 + 3C_2$ $0 = 2C_1 + 3C_2$ ---------- - $3 = C_1$ $-2 = C_2$ Solusi : $y = 3e^{2x} - 2e^{3x} + 2e^x$
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