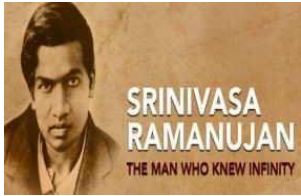
	SRM Institute of Science and Technology Kattankulathur	
	DEPARTMENT OF MATHEMATICS	
	18MAB101T Calculus and Linear Algebra	
	UNIT –III – Ordinary Differential Equations	
Sl.No.	Tutorial Sheet -2	Answers
1	Solve $(x^2 D^2 - xD + 1)y = 0$	$y = x(A \log x + B)$
2	Solve $(x^2 D^2 + 4xD + 2)y = 0$	$y = \frac{A}{x} + \frac{B}{x^2}$
3	Solve $(x^2 D^2 + 1)y = 0$	$y = \sqrt{x} \left[A \cos \left(\frac{\sqrt{3}}{2} \log x \right) + B \sin \left(\frac{\sqrt{3}}{2} \log x \right) \right]$
4	Solve $((x+2)^2 D^2 + 4(x+2)D + 1)y = 0$	$y = (A \log(x+2) + B)(x+2)$
5	Solve $((2x+1)^2 D^2 - 2(2x+1)D - 12)y = 6x + 5$	$y = A(2x+1)^3 + \frac{B}{2x+1} - \frac{3(2x+1)}{16} - \frac{1}{6}$
6	Solve $(x^2 D^2 + xD - 9)y = \frac{5}{x^2}$	$y = Ax^3 + \frac{B}{x^3} - \frac{1}{x^2}$
7	Solve $(x^2 D^2 + xD + 1)y = 4 \sin(\log x)$	$y = (A \cos(\log x) + B \sin(\log x)) - 2 \log x (\cos(\log x))$
8	Solve $(x^2 D^2 - 4xD + 6)y = x^2 + \log x$	$y = (Ax^2 + Bx^3) - x^2 \log x + \frac{\log x}{6} + \frac{5}{36}$
9	Solve $(x^2 D^2 - xD + 1)y = \frac{\log x}{x}$	$y = x(A \log x + B) + \frac{1}{27x^2} [3(\log x)^2 + 4(\log x) + 2]$