

Differential Equations – Day 4 In Class

Professor:

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For each of the following problems:

1. Show all the steps needed to solve the ODE for a general solution
2. Apply the initial condition to find the particular solution.

GROUP 1

$$y' = 1 + x + y + xy, \quad y(0) = 0$$

GROUP 2

$$xy' = 3y + x^4 \cos(x), \quad y(2\pi) = 0$$

GROUP 3

$$y' = 2xy + 3x^2 e^{x^2}, \quad y(0) = 5$$

GROUP 4

$$xy' + (2x - 3)y = 4x^4$$

For this problem try to apply the initial conditions: $y(0) = 2$ and $y(0) = 0$, explain what happens here. Hint: think back to last class.