

YOUR NAME: _____

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Find the general solution of the differential equation in explicit form (solved for y)

$$\frac{dy}{dt} - 7y = 3te^{7t}$$

2. Find the solution of the initial value problem

$$\frac{dy}{dx} = \frac{3x^2 - e^{-2x}}{y + e^{3y}}, \quad y(0) = 1.$$