

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. Solve the differential equation

$$y' = \frac{xy^2}{x^2 + 1}.$$

2. Solve the initial value problem

$$xy' = 2y + x - 1, \quad y(3/2) = 9.$$