Worksheet 3/19/2025

1. Solve the differential equation $y' = (x^2 + 1)(y^2 + 1)$

2. Solve the differential equation $x^2y' + xy = 1$ with the initial condition y(1) = 2.

3. Use Euler's method with step size 0.1 to estimate y(0.5), where y(x) is the solution of the initial-value problem y' = y + xy, y(0) = 1.