Worksheet 1/26/2026

1) Solve the initial value problem $y' = x - 2y$, $y(0) = 1$.

2) Solve the initial value problem $y' = y^2 - \frac{y}{x}$, $y(1) = 1$.

3) Solve the initial value problem $y' = \dfrac{y(y-x)}{x^2}$, $y(-1) = 0$.

4) Solve the initial value problem $y' = (x + y + 1)^2$, $y(0) = -1$.