

Name: _____

Score: _____

1. (a) Find the general solution of the differential equation $\sqrt{y^2 - 1} \frac{dy}{dx} = \frac{\ln x}{y}$, $x > 0$. (3 points)
- (b) Find the solution in part (a) that satisfies the initial condition $y(1) = 1$. (1 point)

2. Solve the following initial value problems. (3 points each)

(a) $y' - y = e^x, y(0) = -1$

(b) $x(\ln x)y' + y = xe^x, x > 1, y(e) = 0$