(1) Verify that \( y = x \sin(x) + \cos(x) \ln(\cos(x)) \) is a solution of \( y'' + y = \sec(x) \).

(2) Determine a region in which differential equation \( y' = \sqrt{y^2 - 4} \) has a unique solution through the point \((x_0, y_0)\).

(3) Find all singular constant solutions of the differential equation \( \frac{dy}{dx} = y^2 - 4 \) given that \( y = \frac{2 + ce^x}{1 + ce^x} \) is a one-parameter family of solutions of the differential equation.