Name_____ID_____Section_____

Q1.   Verify that $2x^2 y + xy^2 + e^y = c$ is an **implicit** solution of the differential equation

$$\frac{dy}{dx} = -\frac{y(4x + y)}{2x^2 + 2xy + e^y}$$

Q2.   Determine the region in which $y' = \sqrt{y^2 - 16}$ has a unique solution whose graph passes through a point

(x_o, y_o).

Q3. Use separation of variables method to find an **explicit** solution of the initial value problem

$$\frac{dy}{dx} = \frac{y^2 - 1}{x^2 - 1}, \quad x(2) = 2$$