Name: _____

1. Find the explicit solution of the differential equation: $\dfrac{dy}{dx} = \dfrac{e^{-x} - e^{x}}{3 + 4y}$

2. Solve the differential equation: $x\dfrac{dy}{dx} + 2y = x^2 - x + 1$

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3. Find the implicit solution of the differential equation by using the appropriate substitution.

$$\frac{dy}{dx} = \frac{6x + 2y - 4}{6x + 2y}$$

4. Show this D.E. is not exact, find its integrating factor and solve the equation.

$$xy^3 + (1 + y^2)\frac{dy}{dx} = 0$$