Q.1: Solve the differential equation \((2x + 3x^2y^2) \, dx + (2x^3y + \sin y) \, dy = 0\).

Q.2: Solve the initial value problem \(\cos x \, \frac{dy}{dx} + (1 - \sin x) \, y = \frac{1}{1 + \sin x}, \quad y(0) = 1\).
Q.3: Transform the equation into a separable equation \((2y^2 + 3xy)\, dx + x^2\, dy = 0\).

Q.4: Transform the equation into a linear equation \((2xy + y^4)\, dx = 5x^2\, dy\).