

Show all work. Your answers must be fully justified.

1. Solve the initial value problem. (You may use either the Integrating Factor method or the Separation of Variables Method.)

$$\frac{dy}{dt} = 4y - 6, \quad y(0) = 2.$$

2. Solve the differential equation (explicitly)

$$\frac{dy}{dx} = 6x^2y^4.$$