

$$\textcircled{4} \quad \frac{dy}{dx} = \frac{y}{x^2} \quad \text{through } (1, 3)$$

$$\int \frac{1}{y} dy = \int \frac{1}{x^2} dx$$

$$\ln |y| = -\frac{1}{x} + C_1$$

$$\pm e^{-1/x + C_1} = y$$

$$\pm e^{-1/x} \cdot e^{C_1} = y$$

$$y = C e^{-1/x}$$

$$3 = C e^{-1/1}$$

$$3 = C e^{-1}$$

$$C = 3e$$

$$y = 3e^1 (e^{-1/x})$$

$$y = 3e^{1-1/x} = 3e^{(x-1)/x}$$