$$\frac{\tan y}{(1-e^x)^3} = c$$

$$\tan y = c(1-e^x)^3$$

(g) $y' = x^2 y$

الحل :

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

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

$$\text{Ln } y = \frac{x^3}{3} + \text{Ln } c$$

$$\text{Ln } y - \text{Ln } e^{\frac{x^3}{3}} = \text{Ln } c$$

$$\Rightarrow \text{Ln } y - \text{Ln } e^{\frac{x^3}{3}} = \text{Ln } c$$

$$\Rightarrow \text{Ln } \frac{y}{e^{\frac{x^3}{3}}} = \text{Ln } c$$

$$\Rightarrow \frac{y}{e^{\frac{x^3}{3}}} = c \qquad \Rightarrow y = c\, e^{\frac{x^3}{3}}$$

(h) $\dfrac{dy}{dx} = x^2 y^2 - 4x^2$

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