$$\frac{dy}{dx} - e^{-y}\sec^2 x = 0$$

$$\frac{dy}{dx} = e^{-y}\sec^2 x \, dx$$

$$\frac{dy}{e^{-y}} = \sec^2 x \, dx$$

$$\int e^{y} \, dy = \int \sec^2 x \, dx$$

$$e^{y} = \tan x + C$$

$$y = \ln(\tan x + C)$$