

$$(c) \quad \sec^2 y \frac{dy}{dx} + \tan x \tan y = 0$$

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

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

$$\int \frac{\sec^2 y}{\tan y} dy = -\int \tan x dx$$

$$\text{Ln}(\tan y) = \text{Ln} \cos x + \text{Ln} c$$

$$\Rightarrow \text{Ln} \left( \frac{\tan y}{\cos x} \right) = \text{Ln} c$$

$$\Rightarrow \frac{\tan y}{\cos x} = c$$

$$\Rightarrow \tan y = c \cos x$$

$$(d) \quad e^{x-y} \frac{dy}{dx} + 1 = 0$$

$$\frac{e^x}{e^y} \frac{dy}{dx} = -1$$

$$\Rightarrow \frac{1}{e^y} dy = -\frac{1}{e^x} dx$$

$$\Rightarrow e^{-y} dy = -e^{-x} dx$$

$$\Rightarrow \int e^{-y} dy = -\int e^{-x} dx$$

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