1) $y' + y \tan x = \tan x$

$y' = -y \tan x + \tan x$

I $y' = -y \tan x$

$\frac{y'}{y} = -\tan x$

$\int \frac{dy}{y} = \int -\tan x \, dx$

$\ln y = \ln|\cos x| + C$

$y_4 = \cos x \quad$ pro $C = 0$

$y_4 = C \cdot \cos x \quad C \in \mathbb{R}$

II $y_p = C(x) \cdot \cos x$

$y_p' = -y_p \tan x + \tan x$

$C'(x)\cos x - C(x)\sin x = -C(x)\cos x \tan x + \tan x$

$C'(x) - C(x)\tan x = -C(x)\tan x + \frac{\tan x}{\cos x}$

$C'(x) = \frac{\sin x}{\cos^2 x}$

$C(x) = \int \frac{\sin x}{\cos^2 x} dx = \left| \begin{matrix} u = \sin x & u' = \cos x \\ v = \tan x & v' = \frac{1}{\cos^2 x} \end{matrix} \right| = \frac{\sin^2 x}{\cos x} - \int \sin x \, dx = \frac{\sin^2 x}{\cos x} + \cos x = \frac{1}{\cos x}$

$y_p = 1$

$y = C \cdot \cos x + 1 \quad C \in \mathbb{R}$