[gex4] First-order ODE: separation of variables I

Consider three first-order ODEs. The first two or expressed in standard form and the third as a differential:

$$y' = 8 - 3y, \quad y' = \frac{\tan x}{\cos x}, \quad (4x + xy^2)dx + (y + x^2 y)dy = 0.$$

Each ODE can be solved by separating variables. Find the general solution for all three cases. Express the solution, which includes exactly one integration constant, either in explicit form, $y(x)$, or in implicit form, $f(x,y) = 0$.

Solution: