Problem:

Find the general solution of the differential equation:

$y' - xy^2 = 0.$

Solution:

$y' - xy^2 = 0, \quad \frac{dy}{dx} = xy^2,$ this is an equation with separable variables $\Rightarrow$

$\frac{dy}{y^2} = xdx,$ let's integrate $\Rightarrow \int \frac{dy}{y^2} = \int xdx\,, \quad -\frac{1}{y} = \frac{x^2}{2} + C_1, \Rightarrow \; y = -\frac{2}{x^2 + C}$

will be the general solution of the initial equation, where C is the arbitrary constant.

Answer: $y = -\frac{2}{x^2 + C}$.