

$$y' = y \Leftrightarrow \frac{dy}{dx} = y$$

Separate:

$$\frac{1}{y} dy = dx$$

Integrate:

$$\int \frac{1}{y} dy = \int dx$$

$$\ln|y| = x + c$$

$$|y| = e^{(x+c)}$$

Since RHS > 0,

$$y = Ce^x$$