(1) $e^{t+y} + e^{t+y} \cdot y' = 0$, (2) $y(0) = 1$.

$M(t,y) = e^{t+y}$, $N(t,y) = e^{t+y}$ jsou spojité na $\Omega = \mathbb{R}^2$,

přičemž $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial t}$ na Ω.

$V: \mathbb{R}^2 \to \mathbb{R}$: grad $V = (M, N)$. Tedy

$$\frac{\partial V(t,y)}{\partial t} = e^{t+y}, \quad \frac{\partial V(t,y)}{\partial y} = e^{t+y}$$

$$V(t,y) = e^{t+y} + x(y)$$

$$\frac{\partial V(t,y)}{\partial y} = e^{t+y} + x'(y) = e^{t+y}$$ plyne, že

$x'(y) = 0$. Odtud například $x(y) = 0$.

Tedy $V(t,y) = e^{t+y}$. Pro řešení φ úlohy (1),(2)

musí platit: $e^{t+\varphi(t)} = e$, $\varphi(0) = 1$.

$t + \varphi(t) = 1$, tedy $\varphi(t) = 1 - t$.