(1) $M(t,y) + N(t,y)\cdot y' = 0$

$M \in C^1(\Omega)$, $N \in C^1(\Omega)$, kde $\Omega \subset \mathbb{R}^2$ je jednoduše souvislá oblast

$$\mu(t,y)\cdot M(t,y) + \mu(t,y)\cdot N(t,y)\cdot y' = 0$$

$$\frac{\partial(\mu\cdot M)}{\partial y} = \frac{\partial(\mu\cdot N)}{\partial t}$$

$$\frac{\partial\mu}{\partial y}\cdot M + \mu\cdot\frac{\partial M}{\partial y} = \frac{\partial\mu}{\partial t}\cdot N + \mu\cdot\frac{\partial N}{\partial t}$$

$\mu = \mu(t)$: $\quad \mu\cdot\frac{\partial M}{\partial y} = \mu'\cdot N + \mu\cdot\frac{\partial N}{\partial t}$

$\mu = \mu(y)$: $\quad \mu'\cdot M + \mu\cdot\frac{\partial M}{\partial y} = \mu\cdot\frac{\partial N}{\partial t}$

<u>Příklad</u>

$$a(t)\cdot y - b(t) + y' = 0$$

$$\underbrace{\mu(t)\cdot a(t)\cdot y - \mu(t)\cdot b(t)} + \underline{\mu(t)}\cdot y' = 0$$

$$\mu(t)\cdot a(t) = \mu'(t)$$

$$\mu(t) = e^{\int a(t)\,dt}.$$