

$$(1) y' + 2ty = 0$$

$$(2) y(0) = 1$$

$$y' + a(t)y = 0$$

$$a(t) = 2t$$

$$a \in C(\mathbb{R})$$

∃! max. řešení φ na \mathbb{R}

Metoda přenosobení:

$$e^{\int a(t) dt} = e^{\int 2t dt} = e^{t^2}$$

$$y'(t) + 2t y(t) = 0 \quad | \cdot e^{t^2}$$

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

$$\left(y(t) \cdot e^{t^2} \right)' = 0$$

$$y(t) \cdot e^{t^2} = C$$

$$\underline{y(t) = C \cdot e^{-t^2}, C \in \mathbb{R}}$$

$$y(0) = 1 : \quad 1 = C \cdot e^{-0^2} \Rightarrow C = 1 \Rightarrow$$

$$\underline{\underline{\varphi(t) = e^{-t^2}}}$$