$$y' = \frac{\sin t}{5y^4}$$

I takové, že $\forall t \in I: y(t) \neq 0$.

$5y^4 \cdot y' = \sin t$ $\qquad$ $y > 0$ na I nebo $y < 0$ na I

$5y^4 \cdot \frac{dy}{dt} = \sin t \quad | \, dt$

$\int 5y^4 \, dy = \int \sin t \, dt$

$y^5 = C - \cos t, \; C \in \mathbb{R}$

$y(t) = \sqrt[5]{C - \cos t}, \; C \in \mathbb{R}, \; t \in I$

$I: \cos t \neq C.$

$y(0) = -1 \Rightarrow (-1)^5 = C - \cos(0) \Rightarrow C = 0 \Rightarrow$

$$\varphi(t) = \sqrt[5]{-\cos t}, \; t \in \left(-\tfrac{\pi}{2}, \tfrac{\pi}{2}\right)$$

$y(2\pi) = -1 \Rightarrow$

$$\psi(t) = \sqrt[5]{-\cos t}, \; t \in \left(\tfrac{3\pi}{2}, \tfrac{5\pi}{2}\right)$$