2025. 09. 26.

1. $y' = \dfrac{y^2}{\cos(x)} - y\,tg(x) - \cos(x)$ emiatt nem Bernoulli

$y' = a(x)y^2 + b(x)y + c(x)$ Riccati-egyenlet

y_0 megoldás, hh

$y_0' = a(x)y_0^2 + b(x)y_0 + c(x)$

$(y-y_0)' = a(x)(y^2-y_0^2) + b(x)(y-y_0)$

$\underbrace{(y-y_0)}_{z}(y+y_0) =$

$y' = a(x)z(z+2y_0) + b(x)z$ Bernoulli-féle DE

$\boxed{z = y - y_0 \text{ -ra} \updownarrow\ y = y_0 + z}$

$\cos = \dfrac{\cancel{\cos}^2}{\cancel{\cos}} - \cos tg - \cancel{\cos} = -\sin$

$y = z + \cos(x)$

$z' - \sin(x) = \dfrac{(z+\cos(x))^2}{\cos(x)} - (z+\cos(x))tg(x) - \cos(x)$

$z' - \cancel{\sin(x)} = \dfrac{z^2 + 2\cos z + \cancel{\cos^2(x)}}{\cos(x)} - z\,tg(x) - \cancel{\sin(x)} - \cancel{\cos(x)} \quad /:z^2$

$\dfrac{z'}{z^2} = \dfrac{1}{\cos(x)} + \dfrac{1}{z}(2 - tg(x)) \quad /(-1)$

$-\dfrac{z'}{z^2} = -\dfrac{1}{\cos(x)} + \dfrac{1}{z}(tg(x) - 2)$

$u = \dfrac{1}{z} \qquad u' = \dfrac{z'}{z^2}$