$$y(x) = 4 + 8x + 8x^2 + \sum_{k=3}^{\infty} \frac{2^{k-2}\cdot 17}{k!} x^k$$

~~same story as befor~~

oh shit, here we go again

2. $y' = y^4\cos(x) + y\,tg(x)$ $\quad / y^4$ (Bernoulli-féle DE)

$$\frac{y'}{y^4} = \cos(x) + \underbrace{y^{-3}}_{u} tg(x)$$

$u(x) = [y(x)]^{-3}$

$u' = -3y^{-4}\cdot y'$

$$-3y^{-4}y' = -3\cos(x) + (-3)y^{-3}tg(x)$$

$$u' = -3\cos(x) - 3u\,tg(x)$$

homogén

$$\frac{u'}{u} = -3tg(x) \to \log(x) = -3\int\frac{\sin x}{\cos x} = 3\log(\cos x) + c$$

$$x = e^{\cos^3(x)}\cdot c_2$$

$$\underbrace{u'\cos^{-3}(x) + 3u\,tg(x)\cdot\cos^{-3}x}_{u\cos^3 x} = -3\cos^{-2}(x)$$

$$u\cos^{-3} = \int -3\cos^{-2}(x) = -3tg(x) + c$$

$$u = -3\sin(x)\cos^2(x) + c\cos^3(x)$$

$$y = u^{-\frac{1}{3}} = \left(-3\sin(x)\cos^2(x) + c\cos^3(x)\right)^{-\frac{1}{3}} \text{ és } \overbrace{y=0}^{\text{függvény}}$$