

Uppgift B8.15a

$$\begin{aligned}\frac{1}{\sin x} - \frac{1}{\ln(1+x)} &= \frac{\ln(1+x) - \sin x}{\sin x \ln(1+x)} = \frac{x - \frac{x^2}{2} + \mathcal{O}(x^3) - (x + \mathcal{O}(x^3))}{(x + \mathcal{O}(x^3)) \left(x - \frac{x^2}{2} + \mathcal{O}(x^3)\right)} = \frac{-\frac{1}{2}x^2 + \mathcal{O}(x^3)}{x^2 + \mathcal{O}(x^3)} = \\ &= \frac{-\frac{1}{2} + \mathcal{O}(x)}{1 + \mathcal{O}(x)} \rightarrow -\frac{1}{2}\end{aligned}$$

när $x \rightarrow 0$.