

Exercise 14

Calculate y' .

$$y = \ln \sec x$$

Solution

Calculate y' by using the chain rule.

$$\begin{aligned} y' &= \frac{d}{dx}(\ln \sec x) \\ &= \frac{1}{\sec x} \cdot \frac{d}{dx}(\sec x) \\ &= \frac{1}{\sec x} \cdot (\sec x \tan x) \\ &= \tan x \end{aligned}$$