Exercise 38

Evaluate the integral.

$$\int_0^1 \cosh t \, dt$$

Solution

Write the integrand as a derivative using the rule on page 261 and apply the second part of the fundamental theorem of calculus.

$$\begin{aligned}\int_0^1 \cosh t \, dt &= \int_0^1 \frac{d}{dt}(\sinh t) \, dt \\ &= (\sinh t)\Big|_0^1 \\ &= \sinh 1 - \sinh 0 \\ &= \sinh 1\end{aligned}$$