

# Lambda calculus

## 1 Task 1

$$\begin{aligned} & ((\lambda a. (\lambda b. bb)(\lambda b. bb))b)((\lambda c. (cb))(\lambda a. a)) \rightarrow \\ & ((\lambda b. bb)(\lambda b. bb))(((\lambda c. (cb))(\lambda a. a)) \rightarrow \\ & ((\lambda b. bb)(\lambda b. bb))((\lambda a. a)b) \rightarrow \\ & (\lambda b. bb)(\lambda b. bb)b \end{aligned}$$

## 2 Task 2

$$\begin{aligned} & (\lambda x. \lambda y. \lambda z. xz(yz))(\lambda x. \lambda y. x)(\lambda x. \lambda y. x) \rightarrow \\ & (\lambda y. \lambda z. (\lambda x. \lambda y. x)z(yz))(\lambda x. \lambda y. x) \rightarrow \\ & (\lambda y. \lambda z. (\lambda y. z)(yz))(\lambda x. \lambda y. x) \rightarrow \\ & (\lambda y. \lambda z. z)(\lambda x. \lambda y. x) \rightarrow \\ & (\lambda z. z) \end{aligned}$$