

## Task 1. Lambda Term Reduction

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$$\begin{aligned}((\lambda a.(\lambda b.bb)(\lambda b.bb))b)((\lambda c.cb)(\lambda a.a)) &= (\lambda a.(\lambda b.bb)(\lambda b.bb))b((\lambda c.cb)(\lambda a.a)) \\&\rightarrow_{\beta} (\lambda b.bb)(\lambda b.bb)((\lambda c.cb)(\lambda a.a)) \\&\rightarrow_{\beta} (\lambda b.bb)(\lambda b.bb)((\lambda a.a)b) \\&\rightarrow_{\beta} (\lambda b.bb)(\lambda b.bb)b \\&\rightarrow_{\beta} \dots\end{aligned}$$