

Homework 4

June 2, 2018

Task 1

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

Task 2

$$\begin{aligned} S K K &= (\lambda x y z . x z (y z)) (\lambda x y . x) (\lambda x y . x) \rightarrow \lambda z . ((\lambda x y . x) z ((\lambda x y . x) z)) \rightarrow \\ & \lambda z . ((\lambda x y . x) z (\lambda y . z)) \rightarrow \lambda z . z = I \end{aligned}$$