

homework 4, task 2

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March 2019

1 What to do

Prove that $S K K = I$:

$$(\lambda x y z.x z (y z)) (\lambda x y.x) (\lambda x y.x) = \lambda x.x$$

2 Solution

$$(\lambda x y z.x z (y z)) (\lambda x y.x) (\lambda x y.x)$$

$$(\lambda x.\lambda y z.x z (y z)) (\lambda x t.x) (\lambda x y.x)$$

$$(\lambda y z.(\lambda x t.x) z (y z)) (\lambda x y.x)$$

$$(\lambda y z.z) (\lambda x y.x)$$

$$(\lambda y.\lambda z.z) (\lambda x y.x)$$

$$\lambda z.z$$