

$$\begin{aligned}
SKK &= (\lambda x\ y\ z. x\ z\ (y\ z))\ KK \rightarrow_{\beta} \\
&(\lambda y\ z. ((\lambda x. \lambda y. x)\ z\ (y\ z)))\ K \rightarrow_{\beta} \\
&(\lambda y. \lambda z. (\lambda y. z)\ (y\ z))\ K \rightarrow_{\beta} \\
&(\lambda y. \lambda z. z)\ K \equiv \\
&(\lambda y. \lambda z. z)(\lambda y. \lambda z. y) \rightarrow_{\beta} \\
&\lambda z. z \equiv I
\end{aligned}$$