

$$\begin{aligned}
S\ K\ K &\equiv (\lambda x\ y\ z.x\ z\ (y\ z))\ (\lambda x\ y.x)\ (\lambda x\ y.x) \rightarrow_{\beta} \\
&\rightarrow_{\beta} (\lambda z. [\lambda x\ y.x]\ z\ \{[\lambda x\ y.x]\ z\}) \rightarrow_{\beta} \\
&\rightarrow_{\beta} (\lambda z. [\lambda x\ y.x]\ z\ \{\lambda y.z\}) \rightarrow_{\beta} (\lambda z. [\lambda x\ y.x]\ z\ z) \rightarrow_{\beta} \\
&\rightarrow_{\beta} (\lambda z.z) \equiv I
\end{aligned}$$