S K K

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$S \equiv \lambda x\ y\ z.x\ z\ (y\ z)$
$K \equiv\ \lambda x\ y.x$
$I \equiv\ \lambda x.x$

To prove:
$SKK = I$

Proof:

1. $(\lambda x\ y\ z.x\ z\ (y\ z))\ (\lambda x\ y.x)\ (\lambda x\ y.x)\ \rightarrow_\beta$
2. $(\lambda y\ z.(\lambda x\ y.x)\ z\ (y\ z))\ (\lambda x\ y.x)\ \rightarrow_\beta$
3. $(\lambda z.(\lambda x\ y.x)\ z\ ((\lambda x\ y.x)\ z))\ \rightarrow_\beta$
4. $\lambda z.z\ \rightarrow_\alpha$
5. $\lambda x.x\ \equiv\ I$