Term normalization

$((\lambda a.(\lambda b.b\ b)\ (\lambda b.b\ b))\ b)\ ((\lambda c.(c\ b))\ (\lambda a.a)) \Leftrightarrow$

S K K = I proof

$K = \lambda x\ y.x$
$S = \lambda x\ y\ z.x\ z\ (y\ z)$
$SKK = (\lambda x\ y\ z.x\ z\ (y\ z))\ (\lambda x\ y.x)\ (\lambda x\ y.x) = (\lambda x.\lambda y.\lambda z.x\ z\ (y\ z))\ (\lambda x\ y.x)\ (\lambda x\ y.x) \rightarrow_\beta$
$(\lambda y.\lambda z.(\lambda a\ b.a)\ z\ (y\ z))\ (\lambda x\ y.x) \rightarrow_\beta \lambda z.(\lambda a\ b.a)\ z\ ((\lambda a\ b.a)\ z) = \lambda z.(\lambda a.\lambda b.a)\ z\ ((\lambda a.\lambda b.a)\ z) \rightarrow_\beta$
$\lambda z.\lambda b.z\ ((\lambda a.\lambda b.a)\ z \rightarrow_\beta \lambda z.\lambda b.z\ \lambda b.z \rightarrow_\beta \lambda z.z = I$