1 Normal Form

$$((\lambda a.(\lambda b.b\ b)\ (\lambda b.b\ b))\ b)\ ((\lambda c.(c\ b))\ (\lambda a.a)) \rightarrow_\beta$$

$$((\lambda b.b\ b)\ (\lambda b.b\ b))\ ((\lambda c.(c\ b))\ (\lambda a.a)) \rightarrow_\beta$$

$$((\lambda b.b\ b)\ (\lambda b.b\ b))\ ((\lambda c.(c\ b))\ (\lambda a.a)) \rightarrow_\beta$$

$$\ldots$$

2 S S K

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

$$(\lambda x\ y\ z.x\ z\ (y\ z))\ (\lambda a\ b.a)\ (\lambda a\ b.a) \rightarrow_\beta$$

$$(\lambda y\ z.(\lambda a\ b.a)\ z\ (y\ z))\ (\lambda a\ b.a) \rightarrow_\beta$$

$$\lambda z.(\lambda a\ b.a)\ z\ ((\lambda a\ b.a)\ z) \rightarrow_\beta$$

$$\lambda z.(\lambda b.z)\ ((\lambda a\ b.a)\ z) \rightarrow_\beta$$

$$\lambda z.z$$