Aluno: Matheus Rambo da Roza

a) $(\lambda x\, \lambda y\, \lambda w\, \lambda v.\, x\, w\, (y\, w\, v))\, (\lambda s\, \lambda z.\, s\, (s\, z))\, (\lambda a\, \lambda b.\, a\, (a\, (a\, b)))$

$(\lambda x\, \lambda y\, \lambda w\, \lambda v.\, x\, w\, (y\, w\, v))\, (\lambda z.\, (\lambda a\, \lambda b.\, a\, (a\, (a\, b)))\, ((\lambda a\, \lambda b.\, a\, (a\, (a\, b)))\, z)$

$(\lambda x\, \lambda y\, \lambda w\, \lambda v.\, x\, w\, (y\, w\, v))\, (\lambda z.\, (\lambda a\, \lambda b.\, a\, (a\, (a\, b)))\, (\lambda b.\, z\, (z\, (z\, b)))$

$(\lambda x\, \lambda y\, \lambda w\, \lambda v.\, x\, w\, (y\, w\, v))\, (\lambda a\, \lambda b.\, a\, (a\, (a\, b)))$

$\lambda y\, \lambda w\, \lambda v.\, (\lambda a\, \lambda b.\, a\, (a\, (a\, b)))\, w\, (y\, w\, v)$

$\lambda y\, \lambda w\, \lambda v.\, (\lambda b.\, w\, (w\, (w\, b)))\, (y\, w\, v)$

$\lambda y\, \lambda w\, \lambda v.\, (w\, (w\, (w\, (y\, w\, v))))$

b) $(\lambda x\, \lambda y\, \lambda w\, \lambda v.\, x\, (y\, w)\, v)\, (\lambda s\, \lambda z.\, s\, (s\, z))\, (\lambda a\, \lambda b.\, a\, (a\, (a\, b)))$

$(\lambda x\, \lambda y\, \lambda w\, \lambda v.\, x\, (y\, w)\, v)\, (\lambda z.\, (\lambda a\, \lambda b.\, a\, (a\, (a\, b)))\, ((\lambda a\, \lambda b.\, a\, (a\, (a\, b)))\, z)$

$(\lambda x\, \lambda y\, \lambda w\, \lambda v.\, x\, (y\, w)\, v)\, (\lambda z.\, (\lambda a\, \lambda b.\, a\, (a\, (a\, b)))\, (\lambda b.\, z\, (z\, (z\, b)))$

$(\lambda x\, \lambda y\, \lambda w\, \lambda v.\, x\, (y\, w)\, v)\, (\lambda a\, \lambda b.\, a\, (a\, (a\, b)))$

$\lambda y\, \lambda w\, \lambda v.\, (\lambda a\, \lambda b.\, a\, (a\, (a\, b)))\, (y\, w)\, v$

$\lambda y\, \lambda w\, \lambda v.\, (\lambda b.\, (y\, w)\, ((y\, w)\, ((y\, w)\, b)))\, v$

$\lambda y\, \lambda w\, \lambda v.\, (y\, w)\, ((y\, w)\, ((y\, w)\, v))$

$y\, w = s$

$\lambda s\, \lambda v.\, s\, (s\, (s\, v))$