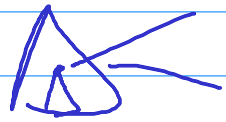
x order 3 $\quad$ t solution term $\quad$ $u_1 \dots u_n$ arguments $\quad$ r rhs

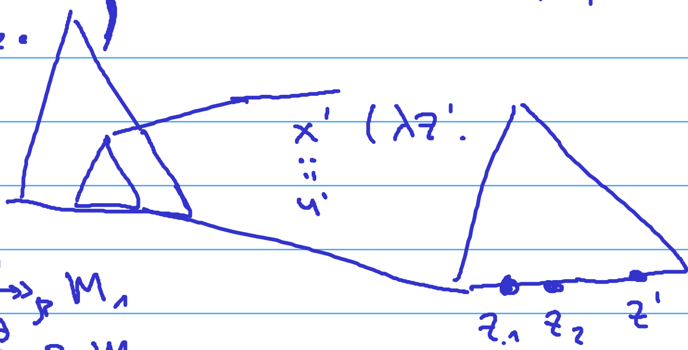
y order 2

z order 1

$x(\lambda z. x'(\lambda z'. z))$ $\quad$ $u' = \lambda y. y(y\, a))$ $\quad$ $\lambda z. z$

$u = \lambda y. y(y(y\, f))$

$t =$ 

x ⋮ u $(\lambda z_1 z_2 .$ 

$u = \lambda y.$ 

$z_1 \dots \xrightarrow{\theta}\!\!\to_\beta M_1$

$z_2 \dots \xrightarrow{\theta}\!\!\to_\beta M_2$

$z' \dots \to\!\!\to_\beta M'$

$M_1 = M'$

\# z_1 on a path in $\underline{GTR}$ $\sim$ \# y in u $\cdot$ (\# z_1 in $\cdot$)

$\underline{x\,(\lambda z. t_1)}\; t_2$

$\to\!\!\to (\lambda z. t_1) v\, [\, y_1 = \lambda z. t_1,\; y_2 = t_2 \,]$

$\to\!\!\to \underline{t_1}\, [\, \cancel{z = v[\dots]}\,]$

$\underline{u} = \lambda y_1 y_2 .\, y_1\, v$

$\lambda y_1 y_2 .\, f\,(\lambda g. \dots)$

$t = x_1(\lambda z_1 . \underline{x_1}(\lambda z_2 . \underline{x_1}(\lambda z_3 . x_2(z_3)\, z_2)\, z_1)\, f$

$u_1 = \lambda y_1 y_2 .\, y_1\, y_2$

$u_2 = \lambda y. y$

$\begin{cases} z_1 \leadsto_\beta f \\ z_2 \leadsto_\beta f \\ z_3 \leadsto_\beta f \end{cases}$

$\leadsto t' = x_1(\lambda z. z_1)\, f$

λz ⋯

$x\,(\lambda z'. \sim$