

$$\begin{array}{c}
 \textcircled{3} \frac{\textcircled{2} \frac{\textcircled{1} \emptyset \vdash \text{let } g = gny.y \text{ in } \lambda x. ffx : t_1}{\emptyset \vdash gny.y : t_1}}{\Sigma y : t_2 \vdash y : t_3} \quad \textcircled{5} \frac{\textcircled{7} T \vdash g : t_9 \quad T \vdash g : t_{10}}{T \vdash g : t_9} \\
 \textcircled{4} \frac{T \vdash g : t_9 \quad T \vdash g : t_{10}}{T = \Sigma g : C_1 \vdash x : t_4 \vdash ffx : t_5} \quad \textcircled{6} \frac{T \vdash x : t_8}{T \vdash x : t_8} \\
 \textcircled{1} \emptyset \vdash \text{let } g = gny.y \text{ in } \lambda x. ffx : t_0
 \end{array}$$

$$\begin{array}{ll}
 \textcircled{1} t_0 \sim t_4 \rightarrow t_5 \checkmark & \textcircled{3} t_3 \sim t_2 \checkmark \\
 \textcircled{2} t_1 \sim t_2 \rightarrow t_3 \checkmark & \textcircled{6} C_1 \supset t_9 \checkmark \\
 \textcircled{4} t_6 \sim t_8 \rightarrow t_5 \checkmark & \textcircled{7} C_1 \supset t_{10} \checkmark \\
 \textcircled{5} t_9 \sim t_{10} \rightarrow t_5 \checkmark & \textcircled{8} t_8 \sim t_4 \checkmark \\
 \textcircled{2'} t_1 \sim t_2 \rightarrow t_2 \cdot T \vdash g : C_1 = \forall \alpha. \alpha \rightarrow \alpha \checkmark & \\
 \textcircled{4'} t_6 \sim t_4 \rightarrow t_5 \checkmark &
 \end{array}$$

$$\begin{array}{l}
 \textcircled{5'} t_9 \sim t_{20} \rightarrow t_{20} \checkmark \\
 \textcircled{7'} t_{10} \sim t_{21} \rightarrow t_{21} \checkmark \\
 \textcircled{5'} t_9 \sim t_{10} \rightarrow t_4 \rightarrow t_5 \checkmark
 \end{array}$$

$$\begin{array}{l}
 \textcircled{5''} t_4 \sim t_5 \sim t_{20} \sim t_{21} \checkmark \\
 \textcircled{6''} t_9 \sim t_4 \rightarrow t_4, \quad t_9 \sim C_1 \sqsubset t_4 \\
 \textcircled{7''} t_{10} \sim t_4 \rightarrow t_4, \quad t_{10} \sim C_1 \sqsubset t_4
 \end{array}$$

$$\textcircled{1'} t_0 \sim t_4 \rightarrow t_4. T \vdash gny.y, \text{ expression is of type } \beta \rightarrow \beta$$