

$$\begin{array}{c}
\frac{\rho(f) = \forall \alpha. \alpha \rightarrow \text{int}}{\rho \vdash f : [t_x/\alpha]t_x \rightarrow \text{int}} \text{ P3} \quad \frac{\rho(f) = \forall \alpha. \alpha \rightarrow \text{int}}{\rho \vdash f : [t_y/\alpha]t_y \rightarrow \text{int}} \text{ P3} \\
\frac{\rho[x \mapsto t_x, f \mapsto t_x \rightarrow t_r] \vdash 1 : \text{int}}{\rho \vdash \text{let } fx = 1 \text{ in } ff \text{ end} : \text{int}} \text{ P1} \quad \frac{\rho \vdash f : [t_x/\alpha]t_x \rightarrow \text{int} \quad \rho \vdash f : [t_y/\alpha]t_y \rightarrow \text{int}}{\rho[f \mapsto \forall \alpha. \alpha \rightarrow \text{int}] \vdash ff : \text{int}} \text{ P4} \\
\hline
\rho \vdash \text{let } fx = 1 \text{ in } ff \text{ end} : \text{int} \quad \text{P8}
\end{array}$$