$$\dfrac{\dfrac{}{\rho[x \mapsto t_x, f \mapsto t_x \to t_r] \vdash 1 : \text{int}}\ \text{P1} \qquad \dfrac{\dfrac{\dfrac{\rho(f) = \forall\alpha.\alpha \to \text{int}}{\rho \vdash f : [t_x/\alpha]t_x \to \text{int}}\ \text{P3} \qquad \dfrac{\rho(f) = \forall\alpha.\alpha \to \text{int}}{\rho \vdash f : [t_y/\alpha]t_y \to \text{int}}\ \text{P3}}{\rho[f \mapsto \forall\alpha.\alpha \to \text{int}] \vdash ff : \text{int}}\ \text{P4}}{\rho \vdash \text{let } fx = 1 \text{ in } ff \text{ end} : \text{int}}\ \text{P8}$$