

$$\frac{\frac{\frac{\frac{\rho_1(f) = \forall \alpha, \alpha \rightarrow \text{int}}{\rho_1 \vdash f : \alpha \rightarrow \text{int}} (p3)}{\rho_1[f \mapsto \forall \alpha, \alpha \rightarrow \text{int}] \vdash f f : \text{int}} (p9)}{\rho_1[f \mapsto \forall \alpha, \alpha \rightarrow \text{int}] \vdash f f : \text{int}} (p8)}{\frac{\frac{[x \mapsto t_x, f \mapsto t_x \rightarrow \text{int}] \vdash 1 : \text{int}}{} (p1)}{\square \vdash \text{let } f \text{ x} = 1 \text{ in } f f \text{ end} : \text{int}} (p8)}$$