

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