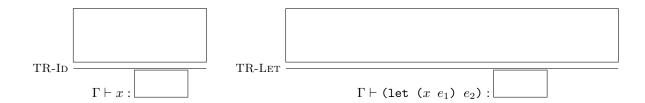
$$\begin{array}{lllll} e & := & n \mid \mathtt{true} \mid \mathtt{false} & & n & := & \mathtt{number\ literals} \\ & \mid & (\mathtt{let\ } (x\ e)\ e) & & x & := & \mathtt{variable\ names} \\ & \mid & (+\ e\ e) \mid (<\ e\ e) & & \tau & := & \mathtt{Num} \mid \mathtt{Bool} \\ & \mid & (\mathtt{if\ } e\ e\ e) & & \Gamma & := & \{x:\tau,\cdots\} \end{array}$$

 ${
m TR-Num}$ $n:{
m Num}$ ${
m TR-True}$ true: Bool ${
m TR-False}$ true: Bool

_			
TD D			
TR-Plus -		TR-Less	
	$(+ e_1 e_2)$		$(\langle e_1 e_2 \rangle \cdot $



$$\begin{aligned} & \text{TR-IFA} \; \frac{\Gamma \vdash e_1 : \tau_1 \quad \Gamma \vdash e_2 : \tau_2 \quad \Gamma \vdash e_3 : \tau_3}{\Gamma \vdash \text{ (if } e_1 \ e_2 \ e_3) : \tau_1} & \text{TR-IFB} \; \frac{\Gamma \vdash e_1 : \text{Bool} \quad \Gamma \vdash e_2 : \tau_2 \quad \Gamma \vdash e_3 : \tau_3}{\Gamma \vdash \text{ (if } e_1 \ e_2 \ e_3) : \tau_2} \\ & \text{TR-IFC} \; \frac{\Gamma \vdash e_1 : \text{Bool} \quad \Gamma \vdash e_2 : \tau_2 \quad \Gamma \vdash e_3 : \tau_3}{\Gamma \vdash \text{ (if } e_1 \ e_2 \ e_3) : \tau_3} & \text{TR-IFD} \; \frac{\Gamma \vdash e_1 : \tau_1 \quad \Gamma \vdash e_2 : \tau_2 \quad \Gamma \vdash e_3 : \tau_3}{\Gamma \vdash \text{ (if } e_1 \ e_2 \ e_3) : \tau_2} \end{aligned}$$

TR-IfE: None of the above

$$\text{TR-Set} \ \frac{\Gamma \vdash e : \tau_1 \qquad \Gamma[x] = \tau_2}{\Gamma \vdash (\text{set } x \ e) : \tau_2}$$