

$$x : \forall \bar{a}. A \in \Gamma \quad \frac{}{\Gamma \vdash x : A[\bar{B}/\bar{a}]} \text{ (TVar)}$$

$$\frac{\Gamma \vdash M : B \rightarrow A \quad \Gamma \vdash N : B}{\Gamma \vdash MN : A} \text{ (TApp)}$$

$$x \notin \text{dom } \Gamma \quad \frac{\Gamma \cup \{x : B\} \vdash M : A}{\Gamma \vdash \lambda x. M : B \rightarrow A} \text{ (TAbs)}$$

EXAMPLE

$$\begin{array}{c} \text{(TVar)} \frac{}{x : f \rightarrow f, z : b \vdash z : e} \quad \text{(TVar)} \frac{}{x : f \rightarrow f, z : b \vdash x : d} \\ \text{(TApp)} \frac{}{x : f \rightarrow f, z : b \vdash z x : c} \\ \text{(TAbs)} \frac{}{x : f \rightarrow f \vdash \lambda z. z x : a} \end{array}$$

A ***type constraint*** is just a pair of monotypes (A, B) written suggestively as $A \stackrel{?}{=} B$.

