

$$\begin{array}{c}
\text{LAMBDA} \frac{\Gamma[x \mapsto \sigma] \vdash e : \tau}{\Gamma \vdash \lambda x. e : \sigma \rightarrow \tau} \quad \text{VAR} \frac{}{\Gamma[x \mapsto \tau] \vdash x : \tau} \\
\\
\text{APPPRIM} \frac{\text{Prim}(\sigma) \quad \Gamma \vdash e : \sigma \rightarrow \tau' \quad \Gamma \vdash e' : \sigma}{\Gamma \vdash e e' : \tau} \quad \text{APPHO} \frac{\text{HO}(\sigma') \quad \Gamma \vdash e : \sigma' \rightarrow \tau' \quad \Gamma \vdash e' : \sigma}{\Gamma \vdash e e' : \tau} \\
\\
\text{IF} \frac{\Gamma \vdash c : \sigma \quad \Gamma \vdash (\sigma \prec \mathbf{True} \implies e : \tau') \quad \Gamma \vdash (\sigma \prec \mathbf{False} \implies e' : \tau'') \quad \tau' \prec \tau \quad \tau'' \prec \tau}{\Gamma \vdash \text{if } c \text{ then } e \text{ else } e' : \tau} \\
\\
\text{CONST} \frac{}{\Gamma \vdash c : c} \\
\\
\text{PLUS} \frac{\Gamma \vdash e : \tau' \quad \Gamma \vdash e' : \tau'' \quad \tau' + \tau'' \prec \tau}{\Gamma \vdash e + e' : \tau}
\end{array}$$