Fig. 6.4 on page 216

$$\frac{}{\rho \vdash \texttt{n} \Rightarrow n}\ \text{Lit} \qquad \frac{x \in \rho}{\rho \vdash \texttt{x} \Rightarrow \rho(x)}\ \text{Id}$$

$$\frac{}{\rho \vdash \texttt{true} \Rightarrow \mathit{true}}\ \text{Tr} \qquad \frac{\rho \vdash \texttt{e1} \Rightarrow n_1, \quad \rho \vdash \texttt{e2} \Rightarrow n_2}{\rho \vdash \texttt{e1 + e2} \Rightarrow \text{plus}(n_1, n_2)}\ \text{Add}$$

$$\frac{\rho \vdash \texttt{e1} \Rightarrow n_1, \quad \rho \vdash \texttt{e2} \Rightarrow n_2}{\rho \vdash \texttt{e1 - e2} \Rightarrow \text{subtr}(n_1, n_2)}\ \text{Sub} \qquad \frac{\rho \vdash \texttt{e1} \Rightarrow b_1, \quad \rho \vdash \texttt{e2} \Rightarrow b_2}{\rho \vdash \texttt{e1 == e2} \Rightarrow \text{equal?}(b_1, b_2)}\ \text{Eq}$$

$$\frac{\rho \vdash \texttt{e} \Rightarrow b}{\rho \vdash \texttt{!e} \Rightarrow \text{not}(b)}\ \text{Neg} \qquad \frac{\rho \vdash \texttt{e1} \Rightarrow n_1, \quad \rho \vdash \texttt{e2} \Rightarrow n_2}{\rho \vdash \texttt{e1 < e2} \Rightarrow \text{less_than?}(n_1, n_2)}\ \text{LT}$$

$$\frac{\rho \vdash \texttt{e} \Rightarrow n}{\rho \vdash \texttt{x = e} \Rightarrow \rho[x \mapsto n]}\ \text{Ass} \qquad \frac{\rho \vdash \texttt{c1} \Rightarrow \rho', \quad \rho' \vdash \texttt{c2} \Rightarrow \rho''}{\rho \vdash \texttt{c1; c2} \Rightarrow \rho''}\ \text{Seq}$$

$$\frac{\rho \vdash \texttt{e} \Rightarrow \mathit{true}, \quad \rho \vdash \texttt{c1} \Rightarrow \rho'}{\rho \vdash \texttt{if (e) \{c1\} else \{c2\}} \Rightarrow \rho'}\ \text{IfT} \qquad \frac{\rho \vdash \texttt{e} \Rightarrow \mathit{false}, \quad \rho \vdash \texttt{c2} \Rightarrow \rho'}{\rho \vdash \texttt{if (e) \{c1\} else \{c2\}} \Rightarrow \rho'}\ \text{IfF}$$

$$\frac{\rho \vdash \texttt{if (e) \{c; while e \{c\}\} else \{\}} \Rightarrow \rho'}{\rho \vdash \texttt{while e \{c\}} \Rightarrow \rho'}\ \text{Wh} \qquad \frac{\rho \vdash \texttt{e} \Rightarrow n, \quad \rho[x \mapsto n] \vdash \texttt{c} \Rightarrow \rho'}{\rho \vdash \texttt{letvar x = e in \{c\}} \Rightarrow \rho'}\ \text{Let}$$