$$1\ \mathscr{C}_{11}\ \frac{\mathscr{D}_{10}\ \vdash \langle \texttt{var x:int=3}, \emptyset \rangle \rightarrow_d \langle \overbrace{[x \leftarrow \ell_x]}^{\rho}, \overbrace{[\ell_x \leftarrow 3]}^{\sigma} \rangle}{\vdash \langle \texttt{var x:int=3;x:=x+1}, \emptyset \rangle \longrightarrow \langle \rho\ ;\ \texttt{x:=x+1}, \sigma \rangle}$$

$$\mathscr{C}_3\mathscr{E}_1\ \frac{\mathscr{E}_2\ \rho \vdash_\Delta \langle x, \sigma \rangle \longrightarrow_e \langle 3, \sigma \rangle \quad \rho(x)=\ell_x \quad \sigma(\ell_x)=3}{\rho \vdash_\Delta \langle x+1, \sigma \rangle \rightarrow_e^* \langle 4, \sigma \rangle}$$

$$\mathscr{C}_1\ \frac{\rho \vdash_\Delta \langle x+1, \sigma \rangle \rightarrow_e^* \langle 4, \sigma \rangle}{\rho \vdash_\Delta \langle \texttt{x:=x+1}, \sigma \rangle \rightarrow_c \langle \texttt{x:=4}, \sigma \rangle}$$

$$\mathscr{C}_2\ \rho \vdash_\Delta \langle \texttt{x:=4}, \sigma \rangle \longrightarrow_c \sigma[\ell_x \leftarrow 4] \qquad \rho(x)=\ell_x$$

$$2\ \mathscr{C}_{13}\ \frac{\rho \vdash_\Delta \langle \texttt{x:=x+1}, \sigma \rangle \longrightarrow_c^* \sigma[\ell_x \leftarrow 4]}{\vdash \langle \rho\ ;\ \texttt{x:=x+1}, \sigma \rangle \longrightarrow_c \sigma[\ell_x \leftarrow 4]}$$