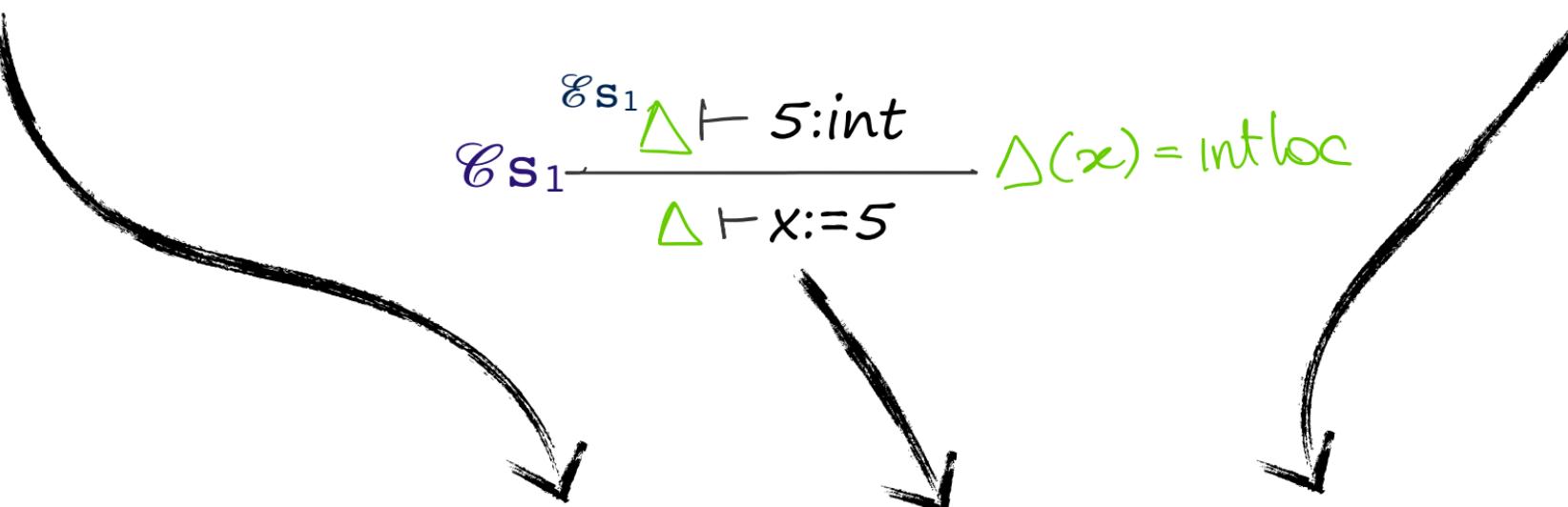


$$\mathcal{E} \mathbf{s}_4 \frac{\mathcal{E} \mathbf{s}_3 \quad \Delta \vdash x:\text{int} \quad \mathcal{E} \mathbf{s}_3 \quad \Delta \vdash y:\text{int}}{\Delta \vdash x=y:\text{bool}}$$

$$\Delta(x) = \text{int loc} \\ \Delta(y) = \text{int}$$

$$\mathcal{C} \mathbf{s}_1 \frac{\mathcal{E} \mathbf{s}_1 \quad \Delta \vdash 6:\text{int}}{\Delta \vdash x:=6} \quad \Delta(x) = \text{int loc}$$

$$\mathcal{C} \mathbf{s}_1 \frac{\mathcal{E} \mathbf{s}_1 \quad \Delta \vdash 5:\text{int}}{\Delta \vdash x:=5} \quad \Delta(x) = \text{int loc}$$



$\mathcal{C} \mathbf{s}_2 \frac{\Delta \vdash x=\text{y:bool} \quad \Delta \vdash x:=5 \quad \Delta \vdash x:=6}{\Delta \vdash \text{if } x=y \text{ then } x:=5 \text{ else } x:=6}$