ℓ	$::=$		Label
	$\|$	$\mathcal{P}$	
	$\|$	$\mathcal{S}$	
σ	$::=$		Base type
	$\|$	uint_b	
	$\|$	bool	
τ	$::=$		Type
	$\|$	σ^ℓ	
	$\|$	$\mathsf{uint}_b^\ell[\,]_n$	
e	$::=$		Expression
	$\|$	n_b	
	$\|$	x	
	$\|$	$e_1 \oplus e_2$	
	$\|$	$e_1 \mathbin{?} e_2 \;:\; e_3$	
	$\|$	$e_1 > e_2$	
	$\|$	$x[\,\overline{e_i}^{\,i\in 1..n}\,]$	
	$\|$	$\textbf{mux}\ e\ e_1\ e_2$	
	$\|$	$e_1 \oplus_{\mathbf{s}} e_2$	
	$\|$	$e_1 >_{\mathbf{s}} e_2$	
	$\|$	$e \triangleright \textbf{arith}$	
	$\|$	$e \triangleright \textbf{bool}$	
c	$::=$		Command
	$\|$	$\tau\ x$	
	$\|$	$x := e$	
	$\|$	$\textbf{foreach}\ x\ \in\ [n \ldots m]\ \{c\}$	
	$\|$	$x[\,\overline{e_i}^{\,i\in 1..n}\,] := e$	
	$\|$	$\textbf{if}\ e\ c_1\ c_2$	
	$\|$	$\textbf{out}\ e$	
	$\|$	$c_1; c_2$	
Γ	$::=$		Type environment
	$\|$	$\cdot$	
	$\|$	$\Gamma, x : \tau$	

$\boxed{\ell_1 \sqsubseteq \ell_2}$

$$\frac{}{\ell \sqsubseteq \ell}\ \text{L\_REFL}$$

$$\frac{}{\mathcal{P} \sqsubseteq \mathcal{S}}\ \text{L\_PS}$$

$\boxed{\Gamma \vdash e : \tau \rightsquigarrow e'}$

$$\frac{}{\Gamma \vdash n_b : \mathsf{uint}_b^{\mathcal{P}} \rightsquigarrow n_b}\ \text{S\_CONST}$$

$$\frac{\Gamma(x) = \tau}{\Gamma \vdash x : \tau \rightsquigarrow x}\ \text{S\_VAR}$$

$$\frac{\Gamma \vdash e_i : \mathsf{uint}_b^{\mathcal{P}} \rightsquigarrow e_i'}{\Gamma \vdash e_1 \oplus e_2 : \mathsf{uint}_b^{\mathcal{P}} \rightsquigarrow e_1' \oplus e_2'}\ \text{S\_PBINOP}$$

$$\frac{\Gamma \vdash e_i : \mathsf{uint}_b^{\mathcal{S}} \rightsquigarrow e_i'}{\Gamma \vdash e_1 \oplus e_2 : \mathsf{uint}_b^{\mathcal{S}} \rightsquigarrow e_1' \oplus_{\mathbf{s}} e_2'}\ \text{S\_SBINOP}$$

$$\frac{\begin{array}{l}\Gamma \vdash e : \mathsf{bool}^{\mathcal{P}} \rightsquigarrow e' \\ \Gamma \vdash e_i : \tau \rightsquigarrow e_i'\end{array}}{\Gamma \vdash e\ ?\ e_1\ :\ e_2 : \tau \rightsquigarrow e'\ ?\ e_1'\ :\ e_2'}\ \text{S\_PCOND}$$

$$\frac{\begin{array}{l}\Gamma \vdash e : \mathsf{bool}^{\mathcal{S}} \rightsquigarrow e' \\ \Gamma \vdash e_i : \tau \rightsquigarrow e_i'\end{array}}{\Gamma \vdash e\ ?\ e_1\ :\ e_2 : \tau \rightsquigarrow \mathbf{mux}\ e'\ e_1'\ e_2'}\ \text{S\_SCOND}$$

$$\frac{\Gamma \vdash e_i : \mathsf{uint}_b^{\mathcal{P}} \rightsquigarrow e_i'}{\Gamma \vdash e_1 > e_2 : \mathsf{bool}^{\mathcal{P}} \rightsquigarrow e_1' > e_2'}\ \text{S\_PGT}$$

$$\frac{\Gamma \vdash e_i : \mathsf{uint}_b^{\mathcal{S}} \rightsquigarrow e_i'}{\Gamma \vdash e_1 > e_2 : \mathsf{bool}^{\mathcal{S}} \rightsquigarrow e_1' >_{\mathbf{s}} e_2'}\ \text{S\_SGT}$$

$$\frac{\begin{array}{l}\Gamma \vdash x : \mathsf{uint}_b^{\ell}[\,]_n \rightsquigarrow x \\ \Gamma \vdash e_i : \mathsf{uint}_b^{\mathcal{P}} \rightsquigarrow e_i'\end{array}}{\Gamma \vdash x[\,\overline{e_i}^{\,i \in 1..n}\,] : \mathsf{uint}_b^{\ell} \rightsquigarrow x[\,\overline{e_i'}^{\,i \in 1..n}\,]}\ \text{S\_AREAD}$$

$$\frac{\begin{array}{l}\Gamma \vdash e : \sigma^{\ell_1} \rightsquigarrow e' \\ \ell_1 \sqsubseteq \ell_2\end{array}}{\Gamma \vdash e : \sigma^{\ell_2} \rightsquigarrow e'}\ \text{S\_SUB}$$