

var, x, y, z	
$context, G$	$\begin{array}{l} ::= \\ \text{ nil} \\ G, x \end{array}$
$type, t, A, B$	$\begin{array}{l} ::= \\ \text{ int} \\ \text{ forall } x.t \quad \text{bind } x \text{ in } t \\ t_1 - > t_2 \\ x \\ (t) \quad \text{S} \\ [t_1/x]t_2 \quad \text{M} \end{array}$
$formula$	$\begin{array}{l} ::= \\ judgement \\ x \# G \quad \text{M} \\ x \$ G \quad \text{M} \end{array}$
$Monotype$	$\begin{array}{l} ::= \\ \text{ mono } A \end{array}$
$DeclarativeSubtyping$	$\begin{array}{l} ::= \\ - G \\ G - t \\ G - t_1 <: t_2 \end{array}$
$judgement$	$\begin{array}{l} ::= \\ Monotype \\ DeclarativeSubtyping \end{array}$
$user_syntax$	$\begin{array}{l} ::= \\ var \\ context \\ type \\ formula \end{array}$

mono A

$$\frac{}{\text{mono int}} \quad \text{MONO_INT}$$

$$\frac{}{\text{mono } x} \quad \text{MONO_VAR}$$

$$\frac{\text{mono } t_1 \quad \text{mono } t_2}{\text{mono } t_1 - > t_2} \quad \text{MONO_ARROW}$$

$| - G$

$$\frac{}{| - \text{ nil}} \quad \text{WF_CTX_NIL}$$

$$\frac{\begin{array}{c} | - G \\ x \# G \end{array}}{| - G, x} \quad \text{WF_CTX_CONS}$$

$$\boxed{G| - t}$$

$$\frac{| - G}{G| - \mathbf{int}} \quad \text{WF_TYP_INT}$$

$$\frac{\begin{array}{c} | - G \\ x \$ G \end{array}}{G| - x} \quad \text{WF_TYP_VAR}$$

$$\frac{\begin{array}{c} | - G \\ G| - t_1 \\ G| - t_2 \end{array}}{G| - t_1 - > t_2} \quad \text{WF_TYP_ARROW}$$

$$\boxed{G| - t_1 <: t_2}$$

$$\frac{x \$ G}{G| - x <: x} \quad \text{S_VAR}$$

$$\frac{}{G| - \mathbf{int} <: \mathbf{int}} \quad \text{S_INT}$$

$$\frac{\begin{array}{c} G| - B_1 <: A_1 \\ G| - A_2 <: A_2 \end{array}}{G| - A_1 - > A_2 <: B_1 - > B_2} \quad \text{S_ARROW}$$

$$\frac{\begin{array}{c} G| - t \\ G| - [t/x]A <: B \end{array}}{G| - \mathbf{forall} x.A <: B} \quad \text{S_FORALLL}$$

$$\frac{G, x| - A <: B}{G| - A <: \mathbf{forall} x.B} \quad \text{S_FORALLR}$$

Definition rules: 13 good 0 bad
Definition rule clauses: 29 good 0 bad