input   output
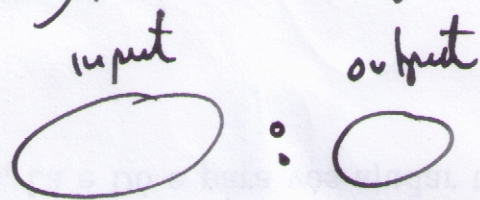
◯ : ◯

$$\boxed{\Delta; \Gamma \vdash e : (T; \Gamma)}$$ $$\boxed{\Delta \vdash T : k}$$

$$\boxed{\Delta; \Gamma \vdash_a e : T}$$

▸ The only rule for $\boxed{\Delta; \Gamma \vdash_a e : T}$

$$\frac{\Delta; \Gamma_1 \vdash e : (T; \Gamma_2) \quad un(\Gamma_2)}{\Delta; \Gamma_1 \vdash_a e : T}$$

▸ Type checking $\boxed{\Delta; \Gamma \vdash e : (T; \Gamma)}$

Shorthand

$$\begin{array}{c|c} \rightarrow_\ell & \rightarrow_o \\ \rightarrow_u & \rightarrow \end{array}$$

$$\frac{\quad\quad\quad\quad \cdot\cdot}{\Delta; \Gamma \vdash () : (unit; \Gamma)}$$

$$\Delta \vdash T_1 \sim T_3$$

$$\frac{\Delta; \Gamma_1 \vdash e_1 : (T_1 \rightarrow_u T_2; \Gamma_2) \quad \Delta; \Gamma_2 \vdash e_2 : (T_3; \Gamma_3)}{\Delta; \Gamma_1 \vdash e_1\, e_2 : (T_2; \Gamma_3)}$$