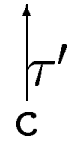
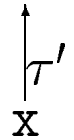
Constraints

(CONST) $\mathtt{E} \triangleright \mathtt{c}{:}\tau \quad (\mathtt{TypeOf(c)} = \tau)$



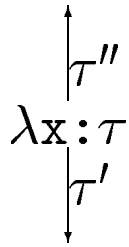
$\tau = \tau'$

(VAR) $\mathtt{E} \triangleright \mathtt{x}{:}\tau \quad (\mathtt{E(x)} = \tau)$



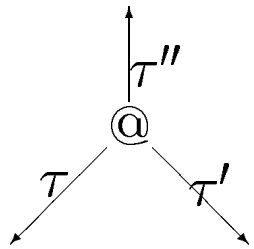
$\tau = \tau'$

(ABS) $\dfrac{\mathtt{E} + \{\mathtt{x}{:}\tau\} \triangleright \mathtt{M}{:}\tau'}{\mathtt{E} \triangleright (\lambda\mathtt{x}{:}\tau.\mathtt{M}){:}\tau''}$



$\tau'' = \tau \to \tau'$

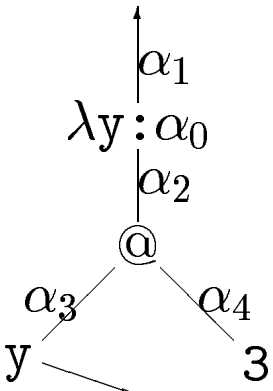
(APP) $\dfrac{\mathtt{E} \triangleright \mathtt{M}{:}\tau \qquad \mathtt{E} \triangleright \mathtt{N}{:}\tau'}{\mathtt{E} \triangleright (\mathtt{MN}){:}\tau''}$



$\tau = \tau' \to \tau''$

Given a complete expression, we patch the patterns together to get constraint equations.

Example



$\alpha_1 = \alpha_0 \to \alpha_2$

$\alpha_3 = \alpha_4 \to \alpha_2$

$\alpha_4 = \mathtt{int}$

$\alpha_3 = \alpha_0$