

Proof Problems

Exercise 8:

a)

Algorithmic Rule for BEGIN:

$$\frac{C, \Gamma \vdash e_1, \dots, e_n : \tau_1, \dots, \tau_n}{C, \Gamma \vdash \text{BEGIN}(e_1, \dots, e_n) : \tau_n} \text{ (BEGIN)}$$

Algorithmic Rule for LAMBDA:

$$\frac{\begin{array}{l} \Gamma\{x_1 \mapsto \alpha_1, \dots, x_n \mapsto \alpha_n\}, \text{ where all } \alpha_i \text{'s are distinct and fresh} \\ C' = \wedge\{\alpha \sim \theta\alpha \mid \alpha \in \text{dom } \theta \cap \text{ftv}(\Gamma)\} \\ C_b, \Gamma\{x_1 \mapsto \alpha_1, \dots, x_n \mapsto \alpha_n\} \vdash e : \tau \end{array}}{C' \wedge C_b, \Gamma \vdash \text{LAMBDA}(\langle x_1, \dots, x_n \rangle, e) : \alpha_1 \times \dots \times \alpha_n \rightarrow \tau} \text{ (LAMBDA)}$$