A pure type system

(Ax) $\emptyset \vdash s_1 : s_2, \quad \text{when } (s_1, s_2) \in \mathcal{A}$

(Var) $$\frac{\Gamma \vdash A : s}{\Gamma,\, x{:}A \vdash x : A} \quad (x \notin \mathrm{Dom}(\Gamma))$$

(Prod) $$\frac{\Gamma \vdash A : s_1 \qquad \Gamma,\, x{:}A \vdash B : s_2}{\Gamma \vdash (\Pi x{:}A.\, B) : s_3} \quad ((s_1, s_2, s_3) \in \mathcal{R})$$

(Abs) $$\frac{\Gamma,\, x{:}A \vdash B : C \qquad \Gamma \vdash (\Pi x{:}A.\, C) : s}{\Gamma \vdash (\lambda x{:}A.\, B) : (\Pi x{:}A.\, C)}$$

(App) $$\frac{\Gamma \vdash A : (\Pi x{:}B.\, C) \qquad \Gamma \vdash D : B}{\Gamma \vdash (AD) : C[x := D]}$$

(Weak) $$\frac{\Gamma \vdash A : B \qquad \Gamma \vdash C : s}{\Gamma,\, x{:}C \vdash A : B} \quad (x \notin \mathrm{Dom}(\Gamma))$$

(Conv) $$\frac{\Gamma \vdash A : B \qquad \Gamma \vdash B' : s}{\Gamma \vdash A : B'} \quad (B =_\beta B')$$

Rachunek konstrukcji:

$$\mathcal{A} = \{* : \Box\}, \qquad \mathcal{R} = \{(*, *, *), (\Box, *, *), (*, \Box, \Box), (\Box, \Box, \Box)\}$$