

thm_2Ering_2Ering__accessors (TMTXMe6wAjj7Ez58QtirTYnftiUGHWcMxGc)

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Definition 1 We define $c_2Emin_2E_3D_3D_3E$ to be $\lambda P \in 2. \lambda Q \in 2. inj_o (p \ P \Rightarrow p \ Q)$ of type ι .

Definition 2 We define $c_2Emin_2E_3D$ to be $\lambda A. \lambda x \in A. \lambda y \in A. inj_o (x = y)$ of type $\iota \Rightarrow \iota$.

Definition 3 We define c_2Ebool_2ET to be $(ap \ (ap \ (c_2Emin_2E_3D \ (2^2)) \ (\lambda V0x \in 2. V0x)) \ (\lambda V1x \in 2. V1x))$

Definition 4 We define $c_2Ebool_2E_21$ to be $\lambda A_27a : \iota. (\lambda V0P \in (2^{A_27a}). (ap \ (ap \ (c_2Emin_2E_3D \ (2^{A_27a})))$

Definition 5 We define $c_2Ebool_2E_2F_5C$ to be $(\lambda V0t1 \in 2. (\lambda V1t2 \in 2. (ap \ (c_2Ebool_2E_21 \ 2) \ (\lambda V2t \in 2. V2t)))$

Let $ty_2Ering_2Ering : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A0. nonempty \ A0 \Rightarrow nonempty \ (ty_2Ering_2Ering \ A0) \quad (1)$$

Let $c_2Ering_2Ering_R0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a. nonempty \ A_27a \Rightarrow c_2Ering_2Ering_R0 \ A_27a \in (A_27a^{(ty_2Ering_2Ering \ A_27a)}) \quad (2)$$

Let $c_2Ering_2Ering_R1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a. nonempty \ A_27a \Rightarrow c_2Ering_2Ering_R1 \ A_27a \in (A_27a^{(ty_2Ering_2Ering \ A_27a)}) \quad (3)$$

Let $c_2Ering_2Ering_RP : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a. nonempty \ A_27a \Rightarrow c_2Ering_2Ering_RP \ A_27a \in (((A_27a^{A_27a})^{A_27a})^{(ty_2Ering_2Ering \ A_27a)}) \quad (4)$$

Let $c_2Ering_2Ering_RM : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a. nonempty \ A_27a \Rightarrow c_2Ering_2Ering_RM \ A_27a \in (((A_27a^{A_27a})^{A_27a})^{(ty_2Ering_2Ering \ A_27a)}) \quad (5)$$

Let $c_2Ering_2Erecordtype_2Ering : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall A_27a.nonempty\ A_27a \Rightarrow c_2Ering_2Erecordtype_2Ering \\ & A_27a \in ((((((ty_2Ering_2Ering\ A_27a)^{(A_27a\ A_27a)})^{((A_27a\ A_27a)^{A_27a})})^{((A_27a\ A_27a)^{A_27a})})^{A_27a})^{A_27a}) \end{aligned} \quad (6)$$

Let $c_2Ering_2Ering_RN : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a.nonempty\ A_27a \Rightarrow c_2Ering_2Ering_RN\ A_27a \in ((A_27a\ A_27a)^{(ty_2Ering_2Ering\ A_27a)}) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall A_27a.nonempty\ A_27a \Rightarrow (\forall V0a \in A_27a. (\forall V1a0 \in \\ & A_27a. (\forall V2f \in ((A_27a\ A_27a)^{A_27a}). (\forall V3f0 \in ((A_27a\ A_27a)^{A_27a}). \\ & (\forall V4f1 \in (A_27a\ A_27a). ((ap\ (c_2Ering_2Ering_R0\ A_27a) \\ & (ap\ (ap\ (ap\ (ap\ (c_2Ering_2Erecordtype_2Ering\ A_27a)\ V0a)\ V1a0) \\ & V2f)\ V3f0)\ V4f1)) = V0a)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall A_27a.nonempty\ A_27a \Rightarrow (\forall V0a \in A_27a. (\forall V1a0 \in \\ & A_27a. (\forall V2f \in ((A_27a\ A_27a)^{A_27a}). (\forall V3f0 \in ((A_27a\ A_27a)^{A_27a}). \\ & (\forall V4f1 \in (A_27a\ A_27a). ((ap\ (c_2Ering_2Ering_R1\ A_27a) \\ & (ap\ (ap\ (ap\ (ap\ (c_2Ering_2Erecordtype_2Ering\ A_27a)\ V0a)\ V1a0) \\ & V2f)\ V3f0)\ V4f1)) = V1a0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall A_27a.nonempty\ A_27a \Rightarrow (\forall V0a \in A_27a. (\forall V1a0 \in \\ & A_27a. (\forall V2f \in ((A_27a\ A_27a)^{A_27a}). (\forall V3f0 \in ((A_27a\ A_27a)^{A_27a}). \\ & (\forall V4f1 \in (A_27a\ A_27a). ((ap\ (c_2Ering_2Ering_RP\ A_27a) \\ & (ap\ (ap\ (ap\ (ap\ (c_2Ering_2Erecordtype_2Ering\ A_27a)\ V0a)\ V1a0) \\ & V2f)\ V3f0)\ V4f1)) = V2f)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall A_27a.nonempty\ A_27a \Rightarrow (\forall V0a \in A_27a. (\forall V1a0 \in \\ & A_27a. (\forall V2f \in ((A_27a\ A_27a)^{A_27a}). (\forall V3f0 \in ((A_27a\ A_27a)^{A_27a}). \\ & (\forall V4f1 \in (A_27a\ A_27a). ((ap\ (c_2Ering_2Ering_RM\ A_27a) \\ & (ap\ (ap\ (ap\ (ap\ (c_2Ering_2Erecordtype_2Ering\ A_27a)\ V0a)\ V1a0) \\ & V2f)\ V3f0)\ V4f1)) = V3f0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall A_27a.nonempty\ A_27a \Rightarrow (\forall V0a \in A_27a. (\forall V1a0 \in \\ & A_27a. (\forall V2f \in ((A_27a\ A_27a)^{A_27a}). (\forall V3f0 \in ((A_27a\ A_27a)^{A_27a}). \\ & (\forall V4f1 \in (A_27a\ A_27a). ((ap\ (c_2Ering_2Ering_RN\ A_27a) \\ & (ap\ (ap\ (ap\ (ap\ (c_2Ering_2Erecordtype_2Ering\ A_27a)\ V0a)\ V1a0) \\ & V2f)\ V3f0)\ V4f1)) = V4f1)))))) \end{aligned} \quad (12)$$

Theorem 1

$$\begin{aligned}
& \forall A_27a. nonempty\ A_27a \Rightarrow ((\forall V0a \in A_27a. (\forall V1a0 \in \\
& A_27a. (\forall V2f \in ((A_27a^{A_27a})^{A_27a}). (\forall V3f0 \in ((A_27a^{A_27a})^{A_27a}). \\
& (\forall V4f1 \in (A_27a^{A_27a}). ((ap\ (c_2Ering_2Ering_R0\ A_27a) \\
& (ap\ (ap\ (ap\ (ap\ (ap\ (c_2Ering_2Erecordtype_2Ering\ A_27a)\ V0a)\ V1a0) \\
& V2f)\ V3f0)\ V4f1)) = V0a)))))) \wedge ((\forall V5a \in A_27a. (\forall V6a0 \in \\
& A_27a. (\forall V7f \in ((A_27a^{A_27a})^{A_27a}). (\forall V8f0 \in ((A_27a^{A_27a})^{A_27a}). \\
& (\forall V9f1 \in (A_27a^{A_27a}). ((ap\ (c_2Ering_2Ering_R1\ A_27a) \\
& (ap\ (ap\ (ap\ (ap\ (ap\ (c_2Ering_2Erecordtype_2Ering\ A_27a)\ V5a)\ V6a0) \\
& V7f)\ V8f0)\ V9f1)) = V6a0)))))) \wedge ((\forall V10a \in A_27a. (\forall V11a0 \in \\
& A_27a. (\forall V12f \in ((A_27a^{A_27a})^{A_27a}). (\forall V13f0 \in ((\\
& A_27a^{A_27a})^{A_27a}). (\forall V14f1 \in (A_27a^{A_27a}). ((ap\ (c_2Ering_2Ering_RP \\
& A_27a)\ (ap\ (ap\ (ap\ (ap\ (ap\ (c_2Ering_2Erecordtype_2Ering\ A_27a) \\
& V10a)\ V11a0)\ V12f)\ V13f0)\ V14f1)) = V12f)))))) \wedge ((\forall V15a \in \\
& A_27a. (\forall V16a0 \in A_27a. (\forall V17f \in ((A_27a^{A_27a})^{A_27a}). \\
& (\forall V18f0 \in ((A_27a^{A_27a})^{A_27a}). (\forall V19f1 \in (A_27a^{A_27a}). \\
& ((ap\ (c_2Ering_2Ering_RM\ A_27a)\ (ap\ (ap\ (ap\ (ap\ (ap\ (c_2Ering_2Erecordtype_2Ering \\
& A_27a)\ V15a)\ V16a0)\ V17f)\ V18f0)\ V19f1)) = V18f0)))))) \wedge ((\forall V20a \in \\
& A_27a. (\forall V21a0 \in A_27a. (\forall V22f \in ((A_27a^{A_27a})^{A_27a}). \\
& (\forall V23f0 \in ((A_27a^{A_27a})^{A_27a}). (\forall V24f1 \in (A_27a^{A_27a}). \\
& ((ap\ (c_2Ering_2Ering_RN\ A_27a)\ (ap\ (ap\ (ap\ (ap\ (ap\ (c_2Ering_2Erecordtype_2Ering \\
& A_27a)\ V20a)\ V21a0)\ V22f)\ V23f0)\ V24f1)) = V24f1)))))))))
\end{aligned}$$