

thm_2EringNorm_2Edatatype__polynom
(TMVESaoX-
PNnx8b85ZdZWrGU6Myyo1YovhWp)

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Let $ty_2EringNorm_2Epolynom : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A0.nonempty\ A0 \Rightarrow nonempty\ (ty_2EringNorm_2Epolynom\ A0) \quad (1)$$

Let $c_2EringNorm_2EPopp : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a.nonempty\ A_27a \Rightarrow c_2EringNorm_2EPopp\ A_27a \in ((ty_2EringNorm_2Epolynom\ A_27a)^{(ty_2EringNorm_2Epolynom\ A_27a)}) \quad (2)$$

Let $c_2EringNorm_2EPMult : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a.nonempty\ A_27a \Rightarrow c_2EringNorm_2EPMult\ A_27a \in ((ty_2EringNorm_2Epolynom\ A_27a)^{(ty_2EringNorm_2Epolynom\ A_27a)})^{(ty_2EringNorm_2Epolynom\ A_27a)} \quad (3)$$

Let $c_2EringNorm_2EPplus : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a.nonempty\ A_27a \Rightarrow c_2EringNorm_2EPplus\ A_27a \in ((ty_2EringNorm_2Epolynom\ A_27a)^{(ty_2EringNorm_2Epolynom\ A_27a)})^{(ty_2EringNorm_2Epolynom\ A_27a)} \quad (4)$$

Let $c_2EringNorm_2EPconst : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a.nonempty\ A_27a \Rightarrow c_2EringNorm_2EPconst\ A_27a \in (ty_2EringNorm_2Epolynom\ A_27a)^{A_27a} \quad (5)$$

Let $ty_2Equote_2Eindex : \iota$ be given. Assume the following.

$$nonempty\ ty_2Equote_2Eindex \quad (6)$$

Let $c_2EringNorm_2EPvar : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a.nonempty\ A_27a \Rightarrow c_2EringNorm_2EPvar\ A_27a \in ((ty_2EringNorm_2Epolynom\ A_27a)^{ty_2Equote_2Eindex}) \quad (7)$$

Definition 1 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 2 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 3 We define $c_2Ebool_2EDATATYPE$ to be $\lambda A_27a : \iota.(\lambda V0x \in A_27a.c_2Ebool_2ET)$.

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

Assume the following.

$$True \tag{8}$$

Assume the following.

$$\forall A_27a.nonempty A_27a \Rightarrow (\forall V0x \in A_27a.((p (ap (c_2Ebool_2EDATATYPE A_27a) V0x)) \Leftrightarrow True)) \tag{9}$$

Theorem 1

$$\forall A_27a.nonempty A_27a \Rightarrow (\forall V0polynom \in (((2^{(ty_2EringNorm_2Epolynom A_27a)})^{ty_2EringNorm_2Epolynom A_27a}))$$