

t3_normform

(TMTeg4GKJHdmYf3nrzH2GnspkgQqHzsEJKk)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v4_finsub_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_normform : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_finsub_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.k2_xboole_0 (k2_xboole_0 X0 X1) X2 = k2_xboole_0 X0 (k2_xboole_0 X1 X2) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X2 (k2_zfmisc_1 X0 X1)))) \Rightarrow (k3_domain_1 X0 X1 X2 = k2_xtuple_0 X2) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X2 (k2_zfmisc_1 X0 X1)))) \Rightarrow (k2_domain_1 X0 X1 X2 = k1_xtuple_0 X2) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X0) \wedge (v4_finsub_1 X0)) \wedge ((m1_subset_1 X1 X0) \wedge (m1_subset_1 X2 X0))) \Rightarrow (k1_finsub_1 X0 X1 X2 = k2_xboole_0 X1 X2) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((m1_subset_1 X2 X0) \wedge (m1_subset_1 X3 X1)))) \Rightarrow (k1_domain_1 X0 X1 X2 X3 = k4_tarski X2 X3) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.k2_xtuple_0 (k4_tarSKI X0 X1) = X1 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.k1_xtuple_0 (k4_tarSKI X0 X1) = X0 \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 \\ & X1)\wedge(m1_subset_1 X2 (k2_zfmisc_1 X0 X1))))\Rightarrow(m1_subset_1 (k3_domain_1 \\ & X0 X1 X2) X1) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 \\ & X1)\wedge(m1_subset_1 X2 (k2_zfmisc_1 X0 X1))))\Rightarrow(m1_subset_1 (k2_domain_1 \\ & X0 X1 X2) X0) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1_xboole_0 \\ & X0)\wedge(v4_finsub_1 X0))\wedge(((\neg v1_xboole_0 X1)\wedge(v4_finsub_1 X1))\wedge \\ & ((m1_subset_1 X2 (k2_zfmisc_1 X0 X1))\wedge(m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1))))))\Rightarrow(m1_subset_1 (k1_normform X0 X1 X2 X3) (k2_zfmisc_1 \\ & X0 X1)) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X0)\wedge(v4_finsub_1 \\ & X0))\wedge((m1_subset_1 X1 X0)\wedge(m1_subset_1 X2 X0)))\Rightarrow(m1_subset_1 \\ & (k1_finsub_1 X0 X1 X2) X0) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0)\wedge(v4_finsub_1 X0))\Rightarrow(\forall X1. \\ & ((\neg v1_xboole_0 X1)\wedge(v4_finsub_1 X1))\Rightarrow(\forall X2.(m1_subset_1 \\ & X2 (k2_zfmisc_1 X0 X1))\Rightarrow(\forall X3.(m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1))\Rightarrow(k1_normform X0 X1 X2 X3 = k1_domain_1 X0 X1 (k1_finsub_1 \\ & X0 (k2_domain_1 X0 X1 X2) (k2_domain_1 X0 X1 X3)) (k1_finsub_1 X1 \\ & (k3_domain_1 X0 X1 X2) (k3_domain_1 X0 X1 X3)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1_xboole_0 \\ & X0)\wedge(v4_finsub_1 X0))\wedge(((\neg v1_xboole_0 X1)\wedge(v4_finsub_1 X1))\wedge \\ & ((m1_subset_1 X2 (k2_zfmisc_1 X0 X1))\wedge(m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1))))))\Rightarrow(k1_normform X0 X1 X2 X3 = k1_normform X0 X1 X3 X2) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X0)\wedge(v4_finsub_1 \\ X0))\wedge((m1_subset_1 X1 X0)\wedge(m1_subset_1 X2 X0)))\Rightarrow(k1_finsub_1 \\ X0 X1 X2 = k1_finsub_1 X0 X2 X1) \end{aligned} \tag{14}$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v1_xboole_0 X0)\wedge(v4_finsub_1 X0))\Rightarrow(\forall X1. \\ ((\neg v1_xboole_0 X1)\wedge(v4_finsub_1 X1))\Rightarrow(\forall X2.(m1_subset_1 \\ X2 (k2_zfmisc_1 X0 X1))\Rightarrow(\forall X3.(m1_subset_1 X3 (k2_zfmisc_1 \\ X0 X1))\Rightarrow(\forall X4.(m1_subset_1 X4 (k2_zfmisc_1 X0 X1))\Rightarrow(k1_normform \\ X0 X1 (k1_normform X0 X1 X2 X3) X4 = k1_normform X0 X1 X2 (k1_normform \\ X0 X1 X3 X4)))))) \end{aligned}$$