

t47_mcart_1
(TMP7wrfUjktyb8P16Q55fF52RM8nG7YSzy3)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k5_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k4_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v2_xtuple_0 : \iota \Rightarrow o$ be given. Let $k3_xtuple_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. \neg(X0 \in X1) \wedge ((X1 \in X2) \wedge ((X2 \in X3) \wedge (X3 \in X0))) \quad (1)$$

Assume the following.

$$\forall X0. (\exists X1. \exists X2. X0 = k4_tarski\ X1\ X2) \Rightarrow ((X0 \neq k1_xtuple_0\ X0) \wedge (X0 \neq k2_xtuple_0\ X0)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0\ X0) \wedge ((\neg v1_xboole_0\ X1) \wedge ((\neg v1_xboole_0\ X2) \wedge (m1_subset_1\ X3\ (k3_zfmisc_1\ X0\ X1\ X2)))))) \Rightarrow (k3_mcart_1\ X0\ X1\ X2\ X3 = k2_xtuple_0\ X3) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0\ X0) \wedge ((\neg v1_xboole_0\ X1) \wedge ((\neg v1_xboole_0\ X2) \wedge (m1_subset_1\ X3\ (k3_zfmisc_1\ X0\ X1\ X2)))))) \Rightarrow (k2_mcart_1\ X0\ X1\ X2\ X3 = k5_xtuple_0\ X3) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0\ X0) \wedge ((\neg v1_xboole_0\ X1) \wedge ((\neg v1_xboole_0\ X2) \wedge (m1_subset_1\ X3\ (k3_zfmisc_1\ X0\ X1\ X2)))))) \Rightarrow (k1_mcart_1\ X0\ X1\ X2\ X3 = k4_xtuple_0\ X3) \quad (5)$$

Assume the following.

$$\forall X0.(v2_xtuple_0 X0) \Rightarrow (k3_xtuple_0 (k4_xtuple_0 X0) (k5_xtuple_0 X0) (k2_xtuple_0 X0) = X0) \quad (6)$$

Assume the following.

$$\forall X0.k5_xtuple_0 X0 = k2_xtuple_0 (k1_xtuple_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.k4_xtuple_0 X0 = k1_xtuple_0 (k1_xtuple_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.k4_tarski X0 X1 = k2_tarski (k2_tarski X0 X1) (k1_tarski X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k3_xtuple_0 X0 X1 X2 = k4_tarski (k4_tarski X0 X1) X2 \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2_tarski X0 X1) \Leftrightarrow (\forall X3. (X3 \in X2) \Leftrightarrow ((X3 = X0) \vee (X3 = X1))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.k2_tarski X0 X1 = k2_tarski X1 X0 \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (\neg v1_xboole_0 X2))) \Rightarrow (\forall X3.(m1_subset_1 X3 (k3_zfmisc_1 X0 X1 X2)) \Rightarrow (v2_xtuple_0 X3)) \quad (13)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\ & (\forall X2.(\neg v1_xboole_0 X2) \Rightarrow (\forall X3.(m1_subset_1 X3 (k3_zfmisc_1 \\ & X0 X1 X2)) \Rightarrow ((X3 \neq k1_mcart_1 X0 X1 X2 X3) \wedge ((X3 \neq k2_mcart_1 X0 X1 X2 \\ & X3) \wedge (X3 \neq k3_mcart_1 X0 X1 X2 X3)))))) \end{aligned}$$