

t11_arytm_0 (TMSCYuNz- zFCtffP7mdzNwhgD1QoqaBY3SXE)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_arytm_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_arytm_3 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k2_arytm_2 : \iota$ be given. Let $k12_arytm_3 : \iota$ be given. Let $k2_arytm_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k7_arytm_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_arytm_2 : \iota \Rightarrow \iota$ be given. Let $k5_arytm_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_arytm_2 : \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \neg(k4_tarski\ k11_arytm_3\ X0 \in k1_numbers) \wedge (X0 = k11_arytm_3) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1\ X0\ X1) \Rightarrow ((v1_xboole_0\ X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$(k11_arytm_3 \in k2_arytm_2) \wedge (k12_arytm_3 \in k2_arytm_2) \quad (3)$$

Assume the following.

$$\forall X0. (m1_subset_1\ X0\ k2_arytm_2) \Rightarrow (\forall X1. (m1_subset_1\ X1\ k2_arytm_2) \Rightarrow ((X0 = k11_arytm_3) \Rightarrow ((X1 = k11_arytm_3) \vee (k2_arytm_1\ X0\ X1 = k4_tarski\ k11_arytm_3\ X1)))) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. k6_subset_1\ X0\ X1 = k4_xboole_0\ X0\ X1 \quad (5)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (6)$$

Assume the following.

$$k11_arytm_3 = k1_xboole_0 \quad (7)$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 \ X0 \ k1_numbers)\wedge(m1_subset_1 \ X1 \ k1_numbers))\Rightarrow(m1_subset_1 \ (k1_arytm_0 \ X0 \ X1) \ k1_numbers) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 \ X0 \ k2_arytm_2)\Rightarrow(\forall X1.(m1_subset_1 \ X1 \ k2_arytm_2)\Rightarrow(((X1 = k11_arytm_3)\Rightarrow(k7_arytm_2 \ X0 \ X1 = X0))\wedge \\ ((X0 = k11_arytm_3)\Rightarrow(k7_arytm_2 \ X0 \ X1 = X1))\wedge(\neg(X1\neq k11_arytm_3)\wedge \\ ((X0\neq k11_arytm_3)\wedge(k7_arytm_2 \ X0 \ X1\neq k4_arytm_2 \ (k5_arytm_2 \ (k3_arytm_2 \ X0) \ (k3_arytm_2 \ X1)))))))) \quad (10) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k4_xboole_0 \ X0 \ X1)\Leftrightarrow(\forall X3.(X3 \in X2)\Leftrightarrow((X3 \in X0)\wedge(\neg X3 \in X1))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2_xboole_0 \ X0 \ X1)\Leftrightarrow(\forall X3.(X3 \in X2)\Leftrightarrow((X3 \in X0)\vee(X3 \in X1))) \quad (12)$$

Assume the following.

$$k1_numbers = k6_subset_1 \ (k2_xboole_0 \ k2_arytm_2 \ (k2_zfmisc_1 \ (k1_tarski \ k1_xboole_0) \ k2_arytm_2)) \ (k1_tarski \ (k4_tarski \ k1_xboole_0 \ k1_xboole_0)) \quad (13)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (((\\
& X0 \in k2_arytm_2) \wedge (X1 \in k2_arytm_2)) \Rightarrow ((X2 = k1_arytm_0 X0 X1) \Leftrightarrow (\exists X3. \\
& (m1_subset_1 X3 k2_arytm_2) \wedge (\exists X4.(m1_subset_1 X4 k2_arytm_2) \wedge \\
& ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = k7_arytm_2 X3 X4)))))) \wedge (((X0 \in k2_arytm_2) \wedge \\
& (X1 \in k2_zfmisc_1 (k1_tarski k6_numbers) k2_arytm_2)) \Rightarrow ((X2 = k1_arytm_0 \\
& X0 X1) \Leftrightarrow (\exists X3.(m1_subset_1 X3 k2_arytm_2) \wedge (\exists X4.(\\
& m1_subset_1 X4 k2_arytm_2) \wedge ((X0 = X3) \wedge ((X1 = k4_tarski k6_numbers \\
& X4) \wedge (X2 = k2_arytm_1 X3 X4)))))) \wedge (((X1 \in k2_arytm_2) \wedge (X0 \in k2_zfmisc_1 \\
& (k1_tarski k6_numbers) k2_arytm_2)) \Rightarrow ((X2 = k1_arytm_0 X0 X1) \Leftrightarrow \\
& (\exists X3.(m1_subset_1 X3 k2_arytm_2) \wedge (\exists X4.(m1_subset_1 \\
& X4 k2_arytm_2) \wedge ((X0 = k4_tarski k6_numbers X3) \wedge ((X1 = X4) \wedge (X2 = \\
& k2_arytm_1 X4 X3)))))) \wedge (\neg(\neg(X0 \in k2_arytm_2) \wedge (X1 \in k2_arytm_2)) \wedge \\
& ((\neg(X0 \in k2_arytm_2) \wedge (X1 \in k2_zfmisc_1 (k1_tarski k6_numbers) \\
& k2_arytm_2)) \wedge (\neg(X1 \in k2_arytm_2) \wedge (X0 \in k2_zfmisc_1 (k1_tarski \\
& k6_numbers) k2_arytm_2)) \wedge (\neg(X2 = k1_arytm_0 X0 X1) \Leftrightarrow (\exists X3. \\
& (m1_subset_1 X3 k2_arytm_2) \wedge (\exists X4.(m1_subset_1 X4 k2_arytm_2) \wedge \\
& ((X0 = k4_tarski k6_numbers X3) \wedge ((X1 = k4_tarski k6_numbers X4) \wedge \\
& (X2 = k4_tarski k6_numbers (k7_arytm_2 X3 X4))))))))))))) \\
& \hspace{15em} (14)
\end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. k2_xboole_0 X0 X1 = k2_xboole_0 X1 X0 \quad (15)$$

Theorem 1

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 k1_numbers) \Rightarrow ((X1 = k6_numbers) \Rightarrow (k1_arytm_0 X0 X1 = X0)))
\end{aligned}$$