

t17_arytm_0 (TMdPnxLf- PqdeEBn2AbZcCbtuNADvAWqdsVg)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k1_arytm_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_arytm_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k2_arytm_2 : \iota$ be given. Let $k7_arytm_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_arytm_3 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k8_arytm_2 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k5_numbers : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_arytm_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k2_arytm_2) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k2_arytm_2) \Rightarrow ((k7_arytm_2 X0 X1 = k11_arytm_3) \Rightarrow (X0 = k11_arytm_3))) \end{aligned} \quad (1)$$

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.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k2_arytm_2) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k2_arytm_2) \Rightarrow (\neg(k8_arytm_2 X0 X1 = k11_arytm_3) \wedge ((X0 \neq k11_arytm_3) \wedge \\ & (X1 \neq k11_arytm_3)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (k2_arytm_0 X0 X0 \in k2_arytm_2) \quad (4)$$

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.

$$k5_numbers = k4_ordinal1 \quad (7)$$

Assume the following.

$$k11_arytm_3 = k1_xboole_0 \quad (8)$$

Assume the following.

$$(\neg v1_xboole_0 \ k4_ordinal1) \wedge (v3_ordinal1 \ k4_ordinal1) \quad (9)$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((\neg v1_xboole_0 \ X0) \wedge ((\neg v1_xboole_0 \ X1) \wedge \\ (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\ X2 \ X0 \ X1) \Rightarrow (m1_subset_1 \ X2 \ X0)) \end{aligned} \quad (11)$$

Assume the following.

$$m2_subset_1 \ k6_numbers \ k1_numbers \ k5_numbers \quad (12)$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((m1_subset_1 \ X0 \ k1_numbers) \wedge (m1_subset_1 \\ X1 \ k1_numbers)) \Rightarrow (m1_subset_1 \ (k2_arytm_0 \ X0 \ X1) \ k1_numbers) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (X2 = k4_xboole_0 \ X0 \ X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (\neg X3 \in X1))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (X2 = k2_xboole_0 \ X0 \ X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow ((X3 \in X0) \vee (X3 \in X1))) \end{aligned} \quad (16)$$

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 = k2_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 = k8_arytm_2 X3 X4)))))) \wedge (((X0 \in k2_arytm_2) \wedge \\
& (X1 \in k2_zfmisc_1 (k1_tarski k6_numbers) k2_arytm_2) \Rightarrow ((X0 = k6_numbers) \vee \\
& ((X2 = k2_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 = k4_tarski k6_numbers (k8_arytm_2 X3 X4)))))) \wedge \\
& (((X1 \in k2_arytm_2) \wedge (X0 \in k2_zfmisc_1 (k1_tarski k6_numbers) \\
& k2_arytm_2) \Rightarrow ((X1 = k6_numbers) \vee ((X2 = k2_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 = k4_tarski k6_numbers \\
& (k8_arytm_2 X4 X3)))))) \wedge (((X0 \in k2_zfmisc_1 (k1_tarski k6_numbers) \\
& k2_arytm_2) \wedge (X1 \in k2_zfmisc_1 (k1_tarski k6_numbers) k2_arytm_2) \Rightarrow \\
& ((X2 = k2_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 = k8_arytm_2 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 (X0 \neq k6_numbers))) \wedge \\
& ((\neg(X1 \in k2_arytm_2) \wedge ((X0 \in k2_zfmisc_1 (k1_tarski k6_numbers) \\
& k2_arytm_2) \wedge (X1 \neq k6_numbers))) \wedge (\neg(X0 \in k2_zfmisc_1 (k1_tarski \\
& k6_numbers) k2_arytm_2) \wedge (X1 \in k2_zfmisc_1 (k1_tarski k6_numbers) \\
& k2_arytm_2) \wedge (\neg(X2 = k2_arytm_0 X0 X1) \Leftrightarrow (X2 = k6_numbers))))))))) \\
& \hspace{15em} (17)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (X1 = k1_tarski X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow \\
& (X2 = X0)) \hspace{15em} (18)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& k1_numbers = k6_subset_1 (k2_xboole_0 k2_arytm_2 (k2_zfmisc_1 \\
& (k1_tarski k1_xboole_0) k2_arytm_2)) (k1_tarski (k4_tarski k1_xboole_0 \\
& k1_xboole_0)) \hspace{15em} (19)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (((\\
& X0 \in k2_arytm_2) \wedge (X1 \in k2_arytm_2) \Rightarrow ((X2 = k1_arytm_0 X0 X1) \Leftrightarrow (\exists X3. \\
& (m1_subset_1 X3 k2_arytm_2) \wedge (\exists X4.(m1_subset_1 X4 k2_arytm_2) \wedge \\
& ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = k7_arytm_2 X3 X4)))))) \wedge (((X0 \in k2_arytm_2) \wedge \\
& (X1 \in k2_zfmisc_1 (k1_tarski k6_numbers) k2_arytm_2) \Rightarrow ((X2 = k1_arytm_0 \\
& X0 X1) \Leftrightarrow (\exists X3.(m1_subset_1 X3 k2_arytm_2) \wedge (\exists X4.(\\
& m1_subset_1 X4 k2_arytm_2) \wedge ((X0 = X3) \wedge ((X1 = k4_tarski k6_numbers \\
& X4) \wedge (X2 = k2_arytm_1 X3 X4)))))) \wedge (((X1 \in k2_arytm_2) \wedge (X0 \in k2_zfmisc_1 \\
& (k1_tarski k6_numbers) k2_arytm_2) \Rightarrow ((X2 = k1_arytm_0 X0 X1) \Leftrightarrow \\
& (\exists X3.(m1_subset_1 X3 k2_arytm_2) \wedge (\exists X4.(m1_subset_1 \\
& X4 k2_arytm_2) \wedge ((X0 = k4_tarski k6_numbers X3) \wedge ((X1 = X4) \wedge (X2 = \\
& k2_arytm_1 X4 X3)))))) \wedge (\neg(\neg(X0 \in k2_arytm_2) \wedge (X1 \in k2_arytm_2)) \wedge \\
& ((\neg(X0 \in k2_arytm_2) \wedge (X1 \in k2_zfmisc_1 (k1_tarski k6_numbers) \\
& k2_arytm_2)) \wedge (\neg(X1 \in k2_arytm_2) \wedge (X0 \in k2_zfmisc_1 (k1_tarski \\
& k6_numbers) k2_arytm_2)) \wedge (\neg(X2 = k1_arytm_0 X0 X1) \Leftrightarrow (\exists X3. \\
& (m1_subset_1 X3 k2_arytm_2) \wedge (\exists X4.(m1_subset_1 X4 k2_arytm_2) \wedge \\
& ((X0 = k4_tarski k6_numbers X3) \wedge ((X1 = k4_tarski k6_numbers X4) \wedge \\
& (X2 = k4_tarski k6_numbers (k7_arytm_2 X3 X4))))))))))))) \\
& \hspace{15em} (20)
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 k1_numbers) \Rightarrow ((k1_arytm_0 (k2_arytm_0 X0 X0) (k2_arytm_0 X1 \\
& X1) = k6_numbers) \Rightarrow (X0 = k6_numbers)))
\end{aligned}$$