

t16\_arytm\_0 (TMdRMVbU-  
MoiGy14KAcVmR4fWNwosPiYBRtR)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k2\_arytm\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_arytm\_2 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  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  $k6\_numbers : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k8\_arytm\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  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. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. k6\_subset\_1 X0 X1 = k4\_xboole\_0 X0 X1 \quad (2)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (3)$$

Assume the following.

$$\neg v1\_xboole\_0 k2\_arytm\_2 \quad (4)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 k2\_arytm\_2) \wedge (m1\_subset\_1 X1 k2\_arytm\_2)) \Rightarrow (m1\_subset\_1 (k8\_arytm\_2 X0 X1) k2\_arytm\_2) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 k1\_numbers) \wedge (m1\_subset\_1 X1 k1\_numbers)) \Rightarrow (m1\_subset\_1 (k2\_arytm\_0 X0 X1) k1\_numbers) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(X2 = k4\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (\neg X3 \in X1))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(X2 = k2\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow ((X3 \in X0) \vee (X3 \in X1))) \end{aligned} \quad (9)$$

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)))))))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} k1\_numbers = k6\_subset\_1 (k2\_xboole\_0 k2\_arytm\_2 (k2\_zfmisc\_1 \\ (k1\_tarski k1\_xboole\_0) k2\_arytm\_2)) (k1\_tarski (k4\_tarski k1\_xboole\_0 \\ k1\_xboole\_0)) \end{aligned} \quad (11)$$

**Theorem 1**  $\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (k2\_arytm\_0 X0 X0 \in k2\_arytm\_2).$