

t14\_taxonom2  
(TMQKzwMY5fmA4F5WhfjjUTHFFPCADWFr5tK)

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Let  $v3\_abian : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_taxonom2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_taxonom2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_setfam\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (m1\_taxonom2 X1 X0) \Rightarrow (\forall X2. ((v4\_taxonom2 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0)))) \Rightarrow (((r1\_tarski X2 X1) \wedge (\forall X3. ((v4\_taxonom2 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0)))) \Rightarrow (((r1\_tarski X3 X1) \wedge (r1\_tarski (k5\_setfam\_1 X0 X2) (k5\_setfam\_1 X0 X3))) \Rightarrow (X2 = X3)))) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 X0)) \Rightarrow (\neg (X3 \in X2) \wedge (X3 = k1\_xboole\_0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (m1\_taxonom2 X1 X0) \Rightarrow ((v3\_abian X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0))) \Rightarrow (\forall X2. ((v4\_taxonom2 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0)))) \Rightarrow (((r1\_tarski X2 X1) \wedge (\forall X3. ((v4\_taxonom2 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0)))) \Rightarrow (((r1\_tarski X3 X1) \wedge (r1\_tarski (k5\_setfam\_1 X0 X2) (k5\_setfam\_1 X0 X3))) \Rightarrow (X2 = X3)))) \Rightarrow (k5\_setfam\_1 X0 X2 = X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (v4\_taxonom2 X0) \Leftrightarrow (\forall X1. \forall X2. ((X1 \in X0) \wedge (X2 \in X0)) \Rightarrow ((X1 = X2) \vee (r1\_xboole\_0 X1 X2))) \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 \\
& X0))) \Rightarrow ((m1\_eqrel\_1 X1 X0) \Leftrightarrow ((k5\_setfam\_1 X0 X1 = X0) \wedge (\forall X2. \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)) \Rightarrow ((X2 \in X1) \Rightarrow ((X2 \neq k1\_xboole\_0) \wedge \\
& (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 X0)) \Rightarrow (\neg(X3 \in X1) \wedge ((X2 \neq \\
& X3) \wedge (\neg r1\_xboole\_0 X2 X3))))))))))
\end{aligned} \tag{5}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.\forall X1.((v3\_abian X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 \\
& X0))) \wedge (m1\_taxonom2 X1 X0)) \Rightarrow (\forall X2.((v4\_taxonom2 X2) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0)))) \Rightarrow (((r1\_tarski X2 X1) \wedge (\forall X3. \\
& ((v4\_taxonom2 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k1\_zfmisc\_1 \\
& X0)))) \Rightarrow (((r1\_tarski X3 X1) \wedge (r1\_tarski (k5\_setfam\_1 X0 X2) (k5\_setfam\_1 \\
& X0 X3))) \Rightarrow (X2 = X3)))) \Rightarrow (m1\_eqrel\_1 X2 X0))
\end{aligned}$$