

## t2\_orders\_1

(TMdXco8kWEU5U9w2LiH6TBBhs9ZbF4G35N5)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_orders\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k9\_setfam\_1 : \iota \Rightarrow \iota$  be given. Let  $k7\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 X0 \quad (2)$$

Assume the following.

$$\forall X0. k9\_setfam\_1 X0 = k1\_zfmisc\_1 X0 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (k7\_subset\_1 X0 X1 X2 = k4\_xboole\_0 X1 X2) \quad (4)$$

Assume the following.

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

Assume the following.

$$\forall X0. \neg v1\_xboole\_0 (k1\_zfmisc\_1 X0) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (X2 = k4\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3. (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (\neg X3 \in X1))) \quad (7)$$

Assume the following.

$$\forall X0. k1\_orders\_1 X0 = k7\_subset\_1 (k1\_zfmisc\_1 X0) (k9\_setfam\_1 X0) (k1\_tarski k1\_xboole\_0) \quad (8)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Leftrightarrow (\forall X1. \neg X1 \in X0) \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. (X1 = k1\_tarski X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow (X2 = X0)) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \Rightarrow ((m1\_subset\_1 X1 X0) \Leftrightarrow \\ (X1 \in X0))) \wedge ((v1\_xboole\_0 X0) \Rightarrow ((m1\_subset\_1 X1 X0) \Leftrightarrow (v1\_xboole\_0 \\ X1))) \end{aligned} \quad (11)$$

**Theorem 1**

$$\forall X0. \forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow ((r1\_tarski X1 X0) \Leftrightarrow (X1 \in k1\_orders\_1 X0))$$