

t15\_relat\_1  
(TMbpr7aT6jjJZx4n7EZ11BpDB6bJcJKJD3k)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (k1\_relat\_1 X0 = k2\_xboole\_0 (k9\_xtuple\_0 X0) (k10\_xtuple\_0 X0)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow ((X3 \in X0) \vee (X3 \in X1))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k10\_xtuple\_0 X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (\exists X3.k4\_tarski X3 X2 \in X0)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k9\_xtuple\_0 X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (\exists X3.k4\_tarski X2 X3 \in X0)) \quad (4)$$

**Theorem 1**

$$\forall X0.\forall X1.\forall X2.(v1\_relat\_1 X2) \Rightarrow ((k4\_tarski X0 X1 \in X2) \Rightarrow ((X0 \in k1\_relat\_1 X2) \wedge (X1 \in k1\_relat\_1 X2)))$$