

t170\_relat\_1 (TMRHzvaxPhBrf-  
mUZtNZUkQ8CsvL2vhJEMaT)

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

$$\forall X0. \forall X1. (\forall X2. (X2 \in X0) \Leftrightarrow (X2 \in X1)) \Rightarrow (X0 = X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (v1\_relat\_1 X2) \Rightarrow ((k4\_tarski X0 X1 \in X2) \Leftrightarrow (X1 \in k9\_relat\_1 X2 X0)) \quad (2)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (3)$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Leftrightarrow (\forall X1. \neg X1 \in X0) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (X1 = k9\_xtuple\_0 X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow (\exists X3. k4\_tarski X2 X3 \in X0)) \quad (5)$$

**Theorem 1**

$$\forall X0. \forall X1. (v1\_relat\_1 X1) \Rightarrow ((X0 \in k9\_xtuple\_0 X1) \Leftrightarrow (k9\_relat\_1 X1 X0 \neq k1\_xboole\_0))$$