

t10\_relset\_2  
(TMT7JRjDr1bJR279mG9h1asQpq1x7bFBjvY)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k9\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_tarski : \iota \Rightarrow \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k7\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. k3\_tarski (k2\_tarski X0 X1) = k2\_xboole\_0 X0 X1 \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (v1\_relat\_1 X0) \Rightarrow (\forall X1. (v1\_relat\_1 X1) \Rightarrow (\forall X2. \\ (v1\_relat\_1 X2) \Rightarrow (k3\_relat\_1 X0 (k2\_xboole\_0 X1 X2) = k2\_xboole\_0 \\ (k3\_relat\_1 X0 X1) (k3\_relat\_1 X0 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. k2\_tarski X0 X0 = k1\_tarski X0 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. k10\_xtuple\_0 (k2\_xboole\_0 X0 X1) = k2\_xboole\_0 \\ (k10\_xtuple\_0 X0) (k10\_xtuple\_0 X1) \quad (4)$$

Assume the following.

$$\forall X0. (v1\_relat\_1 X0) \Rightarrow (\forall X1. (v1\_relat\_1 X1) \Rightarrow (k10\_xtuple\_0 \\ (k3\_relat\_1 X0 X1) = k7\_relat\_1 X1 (k10\_xtuple\_0 X0))) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. k10\_xtuple\_0 (k10\_finseq\_1 X0 X1) = k2\_tarski \\ X0 X1 \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 (k10\_finseq\_1 X0 X1)) \wedge (v1\_funct\_1 \\ (k10\_finseq\_1 X0 X1)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge(v1\_relat\_1 X1))\Rightarrow(v1\_relat\_1 (k2\_xboole\_0 X0 X1)) \quad (8)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0)\Rightarrow(\forall X1.k9\_relat\_1 X0 X1 = k7\_relat\_1 X0 (k1\_tarski X1)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.k2\_tarski X0 X1 = k2\_tarski X1 X0 \quad (10)$$

**Theorem 1**

$$\forall X0.\forall X1.(v1\_relat\_1 X1)\Rightarrow(\forall X2.(v1\_relat\_1 X2)\Rightarrow(k9\_relat\_1 (k2\_xboole\_0 X1 X2) X0 = k2\_xboole\_0 (k9\_relat\_1 X1 X0) (k9\_relat\_1 X2 X0)))$$