

# t8\_relset\_2 (TMGmQei- DMhoG7puakDTfyLRxqUmBbft66cW)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. v1\_relat\_1 (k3\_relat\_1 X0 X1) \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (v1\_relat\_1 X2) \Rightarrow ((X2 = k3\_relat\_1 \\ X0 X1) \Leftrightarrow (\forall X3. \forall X4. (k4\_tarski X3 X4 \in X2) \Leftrightarrow (\exists X5. \\ (k4\_tarski X3 X5 \in X0) \wedge (k4\_tarski X5 X4 \in X1)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (X2 = k3\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (X3 \in X1))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0. (v1\_relat\_1 X0) \Rightarrow (\forall X1. (r1\_tarski X0 X1) \Leftrightarrow (\forall X2. \\ \forall X3. (k4\_tarski X2 X3 \in X0) \Rightarrow (k4\_tarski X2 X3 \in X1))) \end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned} \forall X0. (v1\_relat\_1 X0) \Rightarrow (\forall X1. (v1\_relat\_1 X1) \Rightarrow (\forall X2. \\ (v1\_relat\_1 X2) \Rightarrow (r1\_tarski (k3\_relat\_1 (k3\_xboole\_0 X0 X1) X2) \\ (k3\_xboole\_0 (k3\_relat\_1 X0 X2) (k3\_relat\_1 X1 X2)))))) \end{aligned}$$