

l168\_group\_9  
(TMNgDLvvEkwLsfyUHabkLN1Q7xS68RhreE6)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k6\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

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

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (k6\_relat\_1 (k10\_xtuple\_0 X0) X0 = X0) \quad (2)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (k2\_relat\_1 (k2\_relat\_1 X0) = X0) \quad (3)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (v1\_relat\_1 (k2\_relat\_1 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(v1\_relat\_1 X1) \Rightarrow ((X1 = k2\_relat\_1 X0) \Leftrightarrow (\forall X2.\forall X3.(k4\_tarski X2 X3 \in X1) \Leftrightarrow (k4\_tarski X3 X2 \in X0)))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1 X1) \Rightarrow (\forall X2.(v1\_relat\_1 X2) \Rightarrow ((X2 = k6\_relat\_1 X0 X1) \Leftrightarrow (\forall X3.\forall X4.(k4\_tarski X3 X4 \in X2) \Leftrightarrow ((X4 \in X0) \wedge (k4\_tarski X3 X4 \in X1)))))) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.\forall X2.(v1\_relat\_1 X2) \Rightarrow ((X2 = k5\_relat\_1 X0 X1) \Leftrightarrow (\forall X3.\forall X4.(k4\_tarski X3 X4 \in X2) \Leftrightarrow ((X3 \in X1) \wedge (k4\_tarski X3 X4 \in X0)))))) \quad (7)$$

**Theorem 1**

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(v1\_relat\_1 X1) \Rightarrow ((X0 = k6\_relat\_1 (k10\_xtuple\_0 X0) X1) \Leftrightarrow (k2\_relat\_1 X0 = k5\_relat\_1 (k2\_relat\_1 X1) (k9\_xtuple\_0 (k2\_relat\_1 X0)))))$$