

t14\_dickson  
(TMGz4uXjvV3DRjgkREfZKshWW6eCcAAAnZUA)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_2 : \iota \Rightarrow o$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_dickson : \iota \Rightarrow \iota$  be given. Let  $k1\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k6\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $r4\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1\_relat\_1 X2) \Rightarrow ((k4\_tarski X0 X1 \in X2) \Rightarrow ((X0 \in k1\_relat\_1 X2) \wedge (X1 \in k1\_relat\_1 X2))) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.k6\_subset\_1 X0 X1 = k4\_xboole\_0 X0 X1 \quad (2)$$

Assume the following.

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

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(v1\_relat\_1 X1) \Rightarrow ((X1 = k2\_relat\_1 X0) \Leftrightarrow (\forall X2.\forall X3.(k4\_tarski X2 X3 \in X1) \Leftrightarrow (k4\_tarski X3 X2 \in X0)))) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (k3\_dickson X0 = k6\_subset\_1 X0 (k2\_relat\_1 X0)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k4\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (\neg X3 \in X1))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.k4\_tarski X0 X1 = k2\_tarski (k2\_tarski X0 X1) (k1\_tarski X0) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(r4\_relat\_2 X0 X1) \Leftrightarrow (\forall X2. \forall X3. ((X2 \in X1) \wedge ((X3 \in X1) \wedge ((k4\_tarski X2 X3 \in X0) \wedge (k4\_tarski X3 X2 \in X0)))) \Rightarrow (X2 = X3))) \quad (8)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow ((v4\_relat\_2 X0) \Leftrightarrow (r4\_relat\_2 X0 (k1\_relat\_1 X0))) \quad (9)$$

Assume the following.

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

**Theorem 1**

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1. \forall X2.(v4\_relat\_2 X0) \Rightarrow ((k4\_tarski X1 X2 \in k3\_dickson X0) \Leftrightarrow ((k4\_tarski X1 X2 \in X0) \wedge (X1 \neq X2))))$$