

t1\_roughs\_1  
(TMY8K84FWDrEBryDcTBvfMjr59RrTFrriHP)

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Let  $r1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_eqrel\_1 : \iota \Rightarrow \iota$  be given. Let  $k6\_partfun1 : \iota \Rightarrow \iota$  be given. Let  $v1\_zfmisc\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\neg(X0 \in X1) \wedge ((m1\_subset\_1 X1 (k1\_zfmisc\_1 X2)) \wedge (v1\_xboole\_0 X2)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X1 \in X0) \wedge (X2 \in X0)) \Rightarrow (k4\_tarski X1 X2 \in k1\_eqrel\_1 X0) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((r1\_relset\_1 X0 X1 X2 X3) \Leftrightarrow (r1\_tarski X2 X3)) \quad (6)$$

Assume the following.

$$\forall X0. k6\_partfun1\ X0 = k4\_relat\_1\ X0 \quad (7)$$

Assume the following.

$$\forall X0. v1\_relat\_1\ (k4\_relat\_1\ X0) \quad (8)$$

Assume the following.

$$\forall X0. m1\_subset\_1\ (k1\_eqrel\_1\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)) \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. k4\_tarski\ X0\ X1 = k2\_tarski\ (k2\_tarski\ X0\ X1)\ (k1\_tarski\ X0) \quad (10)$$

Assume the following.

$$\forall X0. (v1\_zfmisc\_1\ X0) \Leftrightarrow (\forall X1. \forall X2. ((X1 \in X0) \wedge (X2 \in X0)) \Rightarrow (X1 = X2)) \quad (11)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1\ X1) \Rightarrow ((X1 = k4\_relat\_1\ X0) \Leftrightarrow (\forall X2. \forall X3. (k4\_tarski\ X2\ X3 \in X1) \Leftrightarrow ((X2 \in X0) \wedge (X2 = X3)))) \quad (12)$$

**Theorem 1**

$$\forall X0. (r1\_relset\_1\ X0\ X0\ (k1\_eqrel\_1\ X0)\ (k6\_partfun1\ X0)) \Rightarrow (v1\_zfmisc\_1\ X0)$$