

## t4\_partit\_2

(TMEtfCXrNNKPx81TqRLt6ipvrBcTtAoQzaw)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_relat\_2 : \iota \Rightarrow o$  be given. Let  $v8\_relat\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_eqrel\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_2 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_partfun1 X1 X0) \wedge \\ ((v3\_relat\_2 X1) \wedge ((v8\_relat\_2 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X0)))))) \Rightarrow (\forall X2. ((v1\_partfun1 X2 X0) \wedge (( \\ v3\_relat\_2 X2) \wedge ((v8\_relat\_2 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X0)))))) \Rightarrow (r1\_relset\_1 X0 X0 (k3\_eqrel\_1 X0 X1 X2) \\ (k4\_relset\_1 X0 X0 X0 X0 X1 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0))) \Rightarrow (r2\_relset\_1 X0 X0 (k3\_eqrel\_1 X0 (k1\_eqrel\_1 X0) X1) (k1\_eqrel\_1 X0)) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. \forall X3. ((m1\_subset\_1 X2 \\ (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((r2\_relset\_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow((r1\_relset\_1 X0 X1 X2 X3)\Leftrightarrow(r1\_tarski X2 X3)) \quad (5)$$

Assume the following.

$$\forall X0.(v3\_relat\_2 (k1\_eqrel\_1 X0))\wedge((v8\_relat\_2 (k1\_eqrel\_1 X0))\wedge(v1\_partfun1 (k1\_eqrel\_1 X0) X0)) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_relat\_2 (k1\_eqrel\_1 X0))\wedge(v1\_partfun1 (k1\_eqrel\_1 X0) X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.((m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\wedge(m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X2 X3))))\Rightarrow(m1\_subset\_1 (k4\_relset\_1 X0 X1 X2 X3 X4 X5) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X3))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0)))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0))))\Rightarrow(m1\_subset\_1 (k3\_eqrel\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0))) \quad (9)$$

Assume the following.

$$\forall X0.m1\_subset\_1 (k1\_eqrel\_1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.k1\_eqrel\_1 X0 = k2\_zfmisc\_1 X0 X0 \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1)\Leftrightarrow((r1\_tarski X0 X1)\wedge(r1\_tarski X1 X0)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0)))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0))))\Rightarrow(k3\_eqrel\_1 X0 X1 X2 = k3\_eqrel\_1 X0 X2 X1) \quad (13)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_partfun1 X1 X0) \wedge \\ ((v3\_relat\_2 X1) \wedge ((v8\_relat\_2 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X0)))))) \Rightarrow ((r2\_relset\_1 X0 X0 (k4\_relset\_1 X0 X0 \\ X0 X0 (k1\_eqrel\_1 X0) X1) (k1\_eqrel\_1 X0)) \wedge (r2\_relset\_1 X0 X0 (k4\_relset\_1 \\ X0 X0 X0 X0 X1 (k1\_eqrel\_1 X0) (k1\_eqrel\_1 X0)))))) \end{aligned}$$