

## t6\_partit\_2

(TMF3pPLAzSixDWNngvnZSw41w81X6V6aUaQ)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_partit1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k15\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_eqrel\_1 X1 X0) \Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 X0) \Rightarrow (\forall X3.(m1\_subset\_1 X3 X0) \Rightarrow \\ & ((k4\_tarski X2 X3 \in k4\_partit1 X0 X1) \Leftrightarrow (X2 \in k15\_bvfunc\_1 X0 X3 X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow \\ & (\forall X2.(\neg v1\_xboole\_0 X2) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X1 X2))) \Rightarrow (\forall X5.\forall X6.(k4\_tarski X5 X6 \in \\ & k4\_relset\_1 X0 X1 X1 X2 X3 X4) \Leftrightarrow (\exists X7.(m1\_subset\_1 X7 X1) \wedge \\ & (k4\_tarski X5 X7 \in X3) \wedge (k4\_tarski X7 X6 \in X4)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X2 \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((r2\_relset\_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 \\ & X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X2 X3)))) \Rightarrow (k4\_relset\_1 X0 X1 X2 X3 \\ & X4 X5 = k3\_relat\_1 X4 X5) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 \\ & X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X2 X3)))) \Rightarrow (m1\_subset\_1 (k4\_relset\_1 \\ & X0 X1 X2 X3 X4 X5) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X3))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge (m1\_eqrel\_1 X1 X0)) \Rightarrow \\ & ((v1\_partfun1 (k4\_partit1 X0 X1) X0) \wedge ((v3\_relat\_2 (k4\_partit1 \\ & X0 X1)) \wedge ((v8\_relat\_2 (k4\_partit1 X0 X1)) \wedge (m1\_subset\_1 (k4\_partit1 \\ & X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(v1\_relat\_1 X2) \Rightarrow ((X2 = k3\_relat\_1 \\ & X0 X1) \Leftrightarrow (\forall X3.\forall X4.(k4\_tarski X3 X4 \in X2) \Leftrightarrow (\exists X5. \\ & (k4\_tarski X3 X5 \in X0) \wedge (k4\_tarski X5 X4 \in X1)))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.k4\_tarski X0 X1 = k2\_tarski (k2\_tarski X0 X1) (k1\_tarski X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \quad (9)$$

### Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_eqrel\_1 X1 X0) \Rightarrow \\ & (\forall X2.(m1\_eqrel\_1 X2 X0) \Rightarrow (\forall X3.(m1\_eqrel\_1 X3 X0) \Rightarrow \\ & ((r2\_relset\_1 X0 X0 (k4\_partit1 X0 X3) (k4\_relset\_1 X0 X0 X0 X0 (k4\_partit1 \\ & X0 X1) (k4\_partit1 X0 X2)))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 X0) \Rightarrow (\forall X5. \\ & (m1\_subset\_1 X5 X0) \Rightarrow ((X4 \in k15\_bvfunc\_1 X0 X5 X3) \Leftrightarrow (\exists X6.( \\ & m1\_subset\_1 X6 X0) \wedge ((X4 \in k15\_bvfunc\_1 X0 X6 X1) \wedge (X6 \in k15\_bvfunc\_1 \\ & X0 X5 X2)))))))))) \end{aligned}$$