

# t30\_partit1 (TMFVGppz- Dah4aHCzEwF8SeCPQesTjR5C5Qn)

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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  $r1\_setfam\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_partit1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_partit1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_relat\_2 : \iota \Rightarrow o$  be given. Let  $v8\_relat\_2 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  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. Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_eqrel\_1 X1 X0) \Rightarrow \\ & (\forall X2.(m1\_eqrel\_1 X2 X0) \Rightarrow (k4\_partit1 X0 (k2\_partit1 X0 X1 \\ & X2) = k4\_eqrel\_1 X0 (k4\_partit1 X0 X1) (k4\_partit1 X0 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_eqrel\_1 X1 X0) \Rightarrow \\ & (\forall X2.(m1\_eqrel\_1 X2 X0) \Rightarrow ((r1\_setfam\_1 X1 X2) \Leftrightarrow (r1\_tarski \\ & (k4\_partit1 X0 X1) (k4\_partit1 X0 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((r1\_tarski X0 X1) \wedge (r1\_tarski \\ & X0 X2)) \Rightarrow (r1\_tarski X0 (k3\_xboole\_0 X1 X2)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v3\_relat\_2 X1) \wedge ((v8\_relat\_2 \\ & X1) \wedge ((v1\_partfun1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X0)))))) \wedge ((v3\_relat\_2 X2) \wedge ((v8\_relat\_2 X2) \wedge ((v1\_partfun1 \\ & X2 X0) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0))))))) \Rightarrow \\ & (k4\_eqrel\_1 X0 X1 X2 = k3\_xboole\_0 X1 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge (m1\_eqrel\_1 X1 X0)) \Rightarrow \\ & ((v1\_partfun1 (k4\_partit1 X0 X1) X0) \wedge (v3\_relat\_2 (k4\_partit1 \\ & X0 X1)) \wedge ((v8\_relat\_2 (k4\_partit1 X0 X1)) \wedge (m1\_subset\_1 (k4\_partit1 \\ & X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge((m1\_eqrel\_1 X1 X0)\wedge(m1\_eqrel\_1 X2 X0)))\Rightarrow(m1\_eqrel\_1 (k2\_partit1 X0 X1 X2) X0) \quad (6)$$

**Theorem 1**

$$\begin{aligned} &\forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.(m1\_eqrel\_1 X1 X0)\Rightarrow \\ &(\forall X2.(m1\_eqrel\_1 X2 X0)\Rightarrow(\forall X3.(m1\_eqrel\_1 X3 X0)\Rightarrow \\ &(((r1\_setfam\_1 X3 X1)\wedge(r1\_setfam\_1 X3 X2))\Rightarrow(r1\_setfam\_1 X3 (k2\_partit1 \\ &X0 X1 X2)))))) \end{aligned}$$