

t36\_partit1  
(TMUofot9Bh4NhFGjACvJM67928yqg9x6t5D)

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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  $k3\_partit1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_partit1 : \iota \Rightarrow \iota$  be given. Let  $k2\_partit1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_setfam\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_eqrel\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_eqrel\_1 X1 X0) \Rightarrow \\ & (\forall X2.(m1\_eqrel\_1 X2 X0) \Rightarrow (((r1\_setfam\_1 X2 X1) \wedge (r1\_setfam\_1 \\ & X1 X2)) \Rightarrow (X1 = X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_eqrel\_1 X1 X0) \Rightarrow \\ & ((r1\_setfam\_1 X1 (k6\_partit1 X0)) \wedge (r1\_setfam\_1 (k10\_eqrel\_1 \\ & X0) X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_eqrel\_1 X1 X0) \Rightarrow \\ & (\forall X2.(m1\_eqrel\_1 X2 X0) \Rightarrow (k2\_partit1 X0 X1 (k3\_partit1 X0 \\ & X1 X2) = X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_eqrel\_1 X1 X0) \Rightarrow \\ & (\forall X2.(m1\_eqrel\_1 X2 X0) \Rightarrow (r1\_setfam\_1 X1 (k3\_partit1 X0 \\ & X1 X2)))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (m1\_eqrel\_1 (k6\_partit1 X0) X0) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0) \wedge ((m1\_eqrel\_1 \\ & X1 X0) \wedge (m1\_eqrel\_1 X2 X0))) \Rightarrow (m1\_eqrel\_1 (k3\_partit1 X0 X1 X2) X0) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge((m1\_eqrel\_1 X1 X0)\wedge(m1\_eqrel\_1 X2 X0)))\Rightarrow(k3\_partit1 X0 X1 X2 = k3\_partit1 X0 X2 X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge((m1\_eqrel\_1 X1 X0)\wedge(m1\_eqrel\_1 X2 X0)))\Rightarrow(k2\_partit1 X0 X1 X2 = k2\_partit1 X0 X2 X1) \quad (8)$$

**Theorem 1**

$$\forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.(m1\_eqrel\_1 X1 X0)\Rightarrow((k3\_partit1 X0 (k6\_partit1 X0) X1 = k6\_partit1 X0)\wedge(k2\_partit1 X0 (k6\_partit1 X0) X1 = X1)))$$