

## t6\_matroid0

(TMX5PdSGmkcwLHyWvxSesEYC4tuLLn9WbZo)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v4\_taxonom2 : \iota \Rightarrow o$  be given. Let  $v1\_setfam\_1 : \iota \Rightarrow o$  be given. Let  $m1\_orders\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_funct\_1 : \iota \Rightarrow o$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_tarski : \iota \Rightarrow \iota$  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  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \neg(X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (\neg(\neg r1\_xboole\_0 X0 X1) \wedge (\forall X2. \neg(X2 \in X0) \wedge (X2 \in X1))) \wedge (\neg(\exists X2. (X2 \in X0) \wedge (X2 \in X1)) \wedge (r1\_xboole\_0 X0 X1)) \quad (2)$$

Assume the following.

$$\forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_orders\_1 X1 X0) \Rightarrow ((\neg k1\_xboole\_0 \in X0) \Rightarrow (k9\_xtuple\_0 X1 = X0))) \quad (3)$$

Assume the following.

$$\forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_orders\_1 X1 X0) \Rightarrow ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 X0 (k3\_tarski X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (k3\_tarski X0))))))) \quad (4)$$

Assume the following.

$$\forall X0. (v1\_setfam\_1 X0) \Leftrightarrow (\neg k1\_xboole\_0 \in X0) \quad (5)$$

Assume the following.

$$\forall X0. (v4\_taxonom2 X0) \Leftrightarrow (\forall X1. \forall X2. ((X1 \in X0) \wedge (X2 \in X0)) \Rightarrow ((X1 = X2) \vee (r1\_xboole\_0 X1 X2))) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v2\_funct\_1 X0) \Leftrightarrow \\ (\forall X1. \forall X2. ((X1 \in k9\_xtuple\_0 X0) \wedge ((X2 \in k9\_xtuple\_0 \\ X0) \wedge (k1\_funct\_1 X0 X1 = k1\_funct\_1 X0 X2))) \Rightarrow (X1 = X2))) \end{aligned} \quad (7)$$

Assume the following.

$$k1\_xboole\_0 = the (\lambda X0 : \iota.v1\_xboole\_0 X0) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow ((\neg k1\_xboole\_0 \in X0) \Rightarrow (\forall X1. \\ ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 X0 (k3\_tarski X0)) \wedge (m1\_subset\_1 \\ X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (k3\_tarski X0)))))) \Rightarrow ((m1\_orders\_1 \\ X1 X0) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (k1\_funct\_1 X1 X2 \in X2)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \end{aligned} \quad (10)$$

**Theorem 1**

$$\begin{aligned} \forall X0. ((\neg v1\_xboole\_0 X0) \wedge ((v4\_taxonom2 X0) \wedge (v1\_setfam\_1 \\ X0))) \Rightarrow (\forall X1. (m1\_orders\_1 X1 X0) \Rightarrow (v2\_funct\_1 X1)) \end{aligned}$$