t41_matroid0 (TMbRrxqgr8eXYXeSKwMisGE4q5rFAY11PhZ)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v3\_pencil\_1 : \iota \Rightarrow o$ be given. Let $v1\_matroid0 : \iota \Rightarrow o$ be given. Let $v2\_matroid0 : \iota \Rightarrow o$ be given. Let $v4\_matroid0 : \iota \Rightarrow o$ be given. Let $l1\_pre\_topc : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v5\_matroid0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k7\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2))) \Rightarrow (m1\_subset\_1\ X0\ X2) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ X1)) \Leftrightarrow (r1\_tarski\ X0\ X1) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v3\_pencil\_1\ X0) \wedge (l1\_pre\_topc\ X0)) \Rightarrow ((v1\_matroid0\ X0) \Leftrightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (((v3\_pre\_topc\ X1\ X0) \wedge (r1\_tarski\ X2\ X1)) \Rightarrow (v3\_pre\_topc\ X2\ X0))))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(r1\_tarski\ X0\ X1) \Rightarrow ((X2 \in X0) \vee (r1\_tarski\ X0\ (k4\_xboole\_0\ X1\ (k1\_tarski\ X2)))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(\forall X2.(X2 \in X0) \Leftrightarrow (X2 \in X1)) \Rightarrow (X0 = X1) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1\ X0\ X1) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (k7\_subset\_1\ X0\ X1\ X2 = k4\_xboole\_0\ X1\ X2) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (m1\_subset\_1\ (k7\_subset\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ X0)) \tag{9}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((v5\_matroid0\ X1\ X0) \Leftrightarrow ((\neg v3\_pre\_topc\ X1\ X0) \wedge (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow ((X2 \in X1) \Rightarrow (v3\_pre\_topc\ (k7\_subset\_1\ (u1\_struct\_0\ X0)\ X1\ (k1\_tarski\ X2))\ X0)))))) \tag{10}$$

Assume the following.

$$\forall X0.((\neg v3\_pencil\_1\ X0) \wedge ((v1\_matroid0\ X0) \wedge (l1\_pre\_topc\ X0))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((v1\_xboole\_0\ X1) \Rightarrow (v3\_pre\_topc\ X1\ X0))) \tag{11}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((\neg v3\_pencil\_1\ X0) \wedge ((v1\_matroid0\ X0) \wedge ((v2\_matroid0\ X0) \wedge ((v4\_matroid0\ X0) \wedge (l1\_pre\_topc\ X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (((v5\_matroid0\ X1\ X0) \wedge ((v5\_matroid0\ X2\ X0) \wedge (r1\_tarski\ X1\ X2))) \Rightarrow (X1 = X2))))$$