

# t3\_matroid0 (TMRvk- TDNsXGR1mZUDZLkdTvsTv85HCV5KJG)

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Let  $v3\_pencil\_1 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v1\_matroid0 : \iota \Rightarrow o$  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  $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_matroid0 : \iota \Rightarrow \iota$  be given. Let  $v1\_classes1 : \iota \Rightarrow o$  be given. Assume the following.

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

Assume the following.

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

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X2)) \Rightarrow (r1\_tarski X0 X2) \quad (3)$$

Assume the following.

$$\forall X0. (l1\_pre\_topc X0) \Rightarrow (m1\_subset\_1 (k1\_matroid0 X0) (k1\_zfmisc\_1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \quad (4)$$

Assume the following.

$$\forall X0. (l1\_pre\_topc X0) \Rightarrow ((v1\_matroid0 X0) \Leftrightarrow (v1\_classes1 (k1\_matroid0 X0))) \quad (5)$$

Assume the following.

$$\forall X0. (l1\_pre\_topc X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((v3\_pre\_topc X1 X0) \Leftrightarrow (X1 \in k1\_matroid0 X0))) \quad (6)$$

Assume the following.

$$\forall X0. (v1\_classes1 X0) \Leftrightarrow (\forall X1. \forall X2. ((X1 \in X0) \wedge (r1\_tarski X2 X1)) \Rightarrow (X2 \in X0)) \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v3\_pencil\_1 X0) \wedge (l1\_pre\_topc X0)) \Rightarrow ((v1\_matroid0 \\ & X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\ & (((v3\_pre\_topc X1 X0) \wedge (r1\_tarSKI X2 X1)) \Rightarrow (v3\_pre\_topc X2 X0)))))) \end{aligned}$$