t30_matroid0 (TMavGndHDx-Pdjr3WQ1nw1rwB4vHPvRyG2MC)

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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 $k6\_matroid0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_matroid0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2\_matroid0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((\neg v3\_pencil\_1\ X0) \wedge ((v1\_matroid0\ X0) \wedge ((v2\_matroid0\ X0) \wedge ((v4\_matroid0\ X0) \wedge (l1\_pre\_topc\ X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (k6\_matroid0\ X0\ X1 = ReplSep\ (toset\ (\lambda X2 : \iota.m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)))\ (\lambda X2 : \iota.r2\_matroid0\ X0\ X2\ X1)\ (\lambda X2 : \iota.X2))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((\neg v3\_pencil\_1\ X0) \wedge ((v1\_matroid0\ X0) \wedge ((v2\_matroid0\ X0) \wedge ((v4\_matroid0\ X0) \wedge (l1\_pre\_topc\ X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((r2\_matroid0\ X0\ X1\ X2) \Leftrightarrow (k4\_matroid0\ X0\ (k4\_subset\_1\ (u1\_struct\_0\ X0)\ X2\ (k6\_domain\_1\ (u1\_struct\_0\ X0)\ X1)) = k4\_matroid0\ X0\ X2)))) \tag{2}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((\neg v3\_pencil\_1\ X0) \wedge ((v1\_matroid0\ X0) \wedge ((v2\_matroid0\ X0) \wedge ((v4\_matroid0\ X0) \wedge (l1\_pre\_topc\ X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow ((X2 \in k6\_matroid0\ X0\ X1) \Leftrightarrow (k4\_matroid0\ X0\ (k4\_subset\_1\ (u1\_struct\_0\ X0)\ X1\ (k6\_domain\_1\ (u1\_struct\_0\ X0)\ X2)) = k4\_matroid0\ X0\ X1))))$$