# t40_orders_2 (TMFTtHbE-JXY3ukjTV9d5oCr3ygUW8B8bfWv)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v3\_orders\_2 : \iota \Rightarrow o$ be given. Let $v4\_orders\_2 : \iota \Rightarrow o$ be given. Let $v5\_orders\_2 : \iota \Rightarrow o$ be given. Let $l1\_orders\_2 : \iota \Rightarrow o$ be given. Let $m1\_orders\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_orders\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $m2\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.(\neg(\neg r1\_xboole\_0\ X0\ X1) \wedge (\forall X2.\neg(X2 \in X0) \wedge (X2 \in X1))) \wedge (\neg(\exists X2.(X2 \in X0) \wedge (X2 \in X1)) \wedge (r1\_xboole\_0\ X0\ X1)) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v3\_orders\_2\ X0) \wedge ((v4\_orders\_2\ X0) \wedge ((v5\_orders\_2\ X0) \wedge (l1\_orders\_2\ X0))))) \Rightarrow (\forall X1.(m1\_orders\_1\ X1\ (k1\_orders\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.(m2\_orders\_2\ X2\ X0\ X1) \Rightarrow (k1\_funct\_1\ X1\ (u1\_struct\_0\ X0) \in X2))) \tag{2}$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v3\_orders\_2\ X0) \wedge ((v4\_orders\_2\ X0) \wedge ((v5\_orders\_2\ X0) \wedge (l1\_orders\_2\ X0))))) \Rightarrow (\forall X1.(m1\_orders\_1\ X1\ (k1\_orders\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.(m2\_orders\_2\ X2\ X0\ X1) \Rightarrow (\forall X3.(m2\_orders\_2\ X3\ X0\ X1) \Rightarrow (\neg r1\_xboole\_0\ X2\ X3))))$$