t15_latsum_1 (TMPex1cYhFmuaMWFfaUFSZDFUF5oSc2irid)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_orders\_2 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r1\_latsum\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4\_orders\_2 : \iota \Rightarrow o$ be given. Let $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_orders\_2 : \iota \Rightarrow \iota$ be given. Let $k1\_latsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(l1\_orders\_2\ X0) \Rightarrow (\forall X1.(l1\_orders\_2\ X1) \Rightarrow (\forall X2. \forall X3.((k4\_tarski\ X2\ X3 \in u1\_orders\_2\ X0) \Rightarrow (k4\_tarski\ X2\ X3 \in u1\_orders\_2\ (k1\_latsum\_1\ X0\ X1))) \wedge ((k4\_tarski\ X2\ X3 \in u1\_orders\_2\ X1) \Rightarrow (k4\_tarski\ X2\ X3 \in u1\_orders\_2\ (k1\_latsum\_1\ X0\ X1)))))) \tag{1}$$

Assume the following.

$$\forall X0.(l1\_orders\_2\ X0) \Rightarrow (\forall X1.(l1\_orders\_2\ X1) \Rightarrow (\forall X2. \forall X3.((k4\_tarski\ X2\ X3 \in u1\_orders\_2\ (k1\_latsum\_1\ X0\ X1)) \wedge ((X2 \in u1\_struct\_0\ X1) \wedge ((X3 \in u1\_struct\_0\ X1) \wedge ((r1\_latsum\_1\ X0\ X1) \wedge (v4\_orders\_2\ X1))))) \Rightarrow (k4\_tarski\ X2\ X3 \in u1\_orders\_2\ X1))) \tag{2}$$

Assume the following.

$$\forall X0.(l1\_orders\_2\ X0) \Rightarrow (\forall X1.(l1\_orders\_2\ X1) \Rightarrow (\forall X2. \forall X3.((k4\_tarski\ X2\ X3 \in u1\_orders\_2\ (k1\_latsum\_1\ X0\ X1)) \wedge ((X2 \in u1\_struct\_0\ X0) \wedge ((X3 \in u1\_struct\_0\ X0) \wedge ((r1\_latsum\_1\ X0\ X1) \wedge (v4\_orders\_2\ X0))))) \Rightarrow (k4\_tarski\ X2\ X3 \in u1\_orders\_2\ X0))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l1\_struct\_0\ X0)) \Rightarrow (\neg v1\_xboole\_0\ (u1\_struct\_0\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.(l1\_orders\_2\ X0) \Rightarrow (l1\_struct\_0\ X0) \tag{6}$$

Assume the following.

$$\begin{gathered}\forall X0.(l1\_orders\_2\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0 \\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow ((r1\_orders\_2 \\ X0\ X1\ X2) \Leftrightarrow (k4\_tarski\ X1\ X2 \in u1\_orders\_2\ X0))))\end{gathered} \tag{7}$$

Theorem 1

$$\begin{gathered}\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l1\_orders\_2\ X0)) \Rightarrow (\forall X1. \\ ((\neg v2\_struct\_0\ X1) \wedge (l1\_orders\_2\ X1)) \Rightarrow (\forall X2.(m1\_subset\_1 \\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0 \\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X1)) \Rightarrow (\forall X5. \\ (m1\_subset\_1\ X5\ (u1\_struct\_0\ X1)) \Rightarrow (((X2 = X4) \wedge ((X3 = X5) \wedge ((r1\_latsum\_1 \\ X0\ X1) \wedge ((v4\_orders\_2\ X0) \wedge (v4\_orders\_2\ X1))))) \Rightarrow ((r1\_orders\_2 \\ X0\ X2\ X3) \Leftrightarrow (r1\_orders\_2\ X1\ X4\ X5)))))))))\end{gathered}$$