t16_lattice8 (TMaTeqTLJE8u9TJ1pXTNMGQxnr3q3xYkJbN)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v3\_ordinal1 : \iota \Rightarrow o$ be given. Let $v5\_ordinal1 : \iota \Rightarrow o$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v4\_ordinal1 : \iota \Rightarrow o$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_lattice8 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k3\_tarski : \iota \Rightarrow \iota$ be given. Let $k10\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_ordinal2 : \iota \Rightarrow \iota$ be given. Let $k1\_ordinal1 : \iota \Rightarrow \iota$ be given. Let $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_lattice8 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2 : \iota \Rightarrow \iota \Rightarrow \iota.\forall X3 : \iota \Rightarrow \iota \Rightarrow \iota.\forall X4.\forall X5 : \iota \Rightarrow \iota.((\forall X6.(v3\_ordinal1\ X6) \Rightarrow (\forall X7.(X7 = X5\ X6) \Leftrightarrow (\exists X8.((v5\_ordinal1\ X8) \wedge ((v1\_relat\_1\ X8) \wedge (v1\_funct\_1\ X8))) \wedge ((X7 = k1\_ordinal2\ X8) \wedge ((k9\_xtuple\_0\ X8 = k1\_ordinal1\ X6) \wedge ((k1\_funct\_1\ X8\ k1\_xboole\_0 = X4) \wedge ((\forall X9.(v3\_ordinal1\ X9) \Rightarrow ((k1\_ordinal1\ X9 \in k1\_ordinal1\ X6) \Rightarrow (k1\_funct\_1\ X8\ (k1\_ordinal1\ X9) = X3\ X9\ (k1\_funct\_1\ X8\ X9)))) \wedge (\forall X9.(v3\_ordinal1\ X9) \Rightarrow (((X9 \in k1\_ordinal1\ X6) \wedge (v4\_ordinal1\ X9)) \Rightarrow ((X9 = k1\_xboole\_0) \vee (k1\_funct\_1\ X8\ X9 = X2\ X9\ (k5\_relat\_1\ X8\ X9))))))))))) \wedge (((X1 \neq k1\_xboole\_0) \wedge (v4\_ordinal1\ X1)) \wedge ((k9\_xtuple\_0\ X0 = X1) \wedge (\forall X6.(v3\_ordinal1\ X6) \Rightarrow ((X6 \in X1) \Rightarrow (k1\_funct\_1\ X0\ X6 = X5\ X6)))))) \Rightarrow (X5\ X1 = X2\ X1\ X0) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge (v5\_relat\_1\ X1\ X0)) \Rightarrow (k2\_relset\_1\ X0\ X1 = k10\_xtuple\_0\ X1) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v5\_ordinal1\ X0))) \wedge (v3\_ordinal1\ X1)) \Rightarrow ((v1\_relat\_1\ (k5\_relat\_1\ X0\ X1)) \wedge ((v5\_relat\_1\ (k5\_relat\_1\ X0\ X1)\ (k10\_xtuple\_0\ X0)) \wedge (v5\_ordinal1\ (k5\_relat\_1\ X0\ X1)))) \tag{3}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(v3\_ordinal1\ X1)\Rightarrow(\forall X2.(X2 = k3\_lattice8\ X0\ X1)\Leftrightarrow(\exists X3.((v5\_ordinal1\ X3)\wedge((v1\_relat\_1\ X3)\wedge(v1\_funct\_1\ X3)))\wedge((X2 = k1\_ordinal2\ X3)\wedge((k9\_xtuple\_0\ X3 = k1\_ordinal1\ X1)\wedge((k1\_funct\_1\ X3\ k1\_xboole\_0 = X0)\wedge((\forall X4.(v3\_ordinal1\ X4)\Rightarrow((k1\_ordinal1\ X4 \in k1\_ordinal1\ X1)\Rightarrow(k1\_funct\_1\ X3\ (k1\_ordinal1\ X4) = k1\_lattice8\ (k1\_funct\_1\ X3\ X4))))\wedge(\forall X4.(v3\_ordinal1\ X4)\Rightarrow(((X4 \in k1\_ordinal1\ X1)\wedge(v4\_ordinal1\ X4))\Rightarrow((X4 = k1\_xboole\_0)\vee(k1\_funct\_1\ X3\ X4 = k3\_tarski\ (k2\_relset\_1\ (k10\_xtuple\_0\ X3)\ (k5\_relat\_1\ X3\ X4))))))))))))) \tag{4}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(v3\_ordinal1\ X1)\Rightarrow(\forall X2.((v5\_ordinal1\ X2)\wedge((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2)))\Rightarrow(((v4\_ordinal1\ X1)\wedge((k9\_xtuple\_0\ X2 = X1)\wedge(\forall X3.(v3\_ordinal1\ X3)\Rightarrow((X3 \in X1)\Rightarrow(k1\_funct\_1\ X2\ X3 = k3\_lattice8\ X0\ X3)))))\Rightarrow((X1 = k1\_xboole\_0)\vee(k3\_lattice8\ X0\ X1 = k3\_tarski\ (k10\_xtuple\_0\ X2))))))$$