

t9_quantal1

(TMRu8f87bsyQXBa8r2F7KkEwKWJD3wbW1t1)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $v4_lattice3 : \iota \Rightarrow o$ be given. Let $v7_quantal1 : \iota \Rightarrow o$ be given. Let $v8_quantal1 : \iota \Rightarrow o$ be given. Let $l1_quantal1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $r1_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v6_lattices : \iota \Rightarrow o$ be given. Let $v8_lattices : \iota \Rightarrow o$ be given. Let $v9_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $v4_lattices : \iota \Rightarrow o$ be given. Let $v7_lattices : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_group_1 X0) \wedge ((v10_lattices \\
 & X0) \wedge ((v4_lattice3 X0) \wedge ((v7_quantal1 X0) \wedge ((v8_quantal1 X0) \wedge \\
 & (l1_quantal1 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\
 & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\
 & (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((r3_lattices X0 X1 X2) \Rightarrow ((r3_lattices \\
 & X0 (k6_algstr_0 X0 X1 X3) (k6_algstr_0 X0 X2 X3)) \wedge (r3_lattices X0 \\
 & (k6_algstr_0 X0 X3 X1) (k6_algstr_0 X0 X3 X2))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v5_lattices X0) \wedge (l2_lattices \\
 & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
 & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
 & (u1_struct_0 X0)) \Rightarrow (((r1_lattices X0 X1 X2) \wedge (r1_lattices X0 X2 \\
 & X3)) \Rightarrow (r1_lattices X0 X1 X3))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v6_lattices \\
 & X0) \wedge ((v8_lattices X0) \wedge ((v9_lattices X0) \wedge (l3_lattices X0)))) \wedge \\
 & ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 \\
 & X0)))) \Rightarrow ((r3_lattices X0 X1 X2) \Leftrightarrow (r1_lattices X0 X1 X2))
 \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.(l3_lattices\ X0)\Rightarrow((l1_lattices\ X0)\wedge(l2_lattices\ X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l1_quantal1\ X0)\Rightarrow((l3_lattices\ X0)\wedge(l3_algstr_0\ X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((l3_algstr_0\ X0)\wedge((m1_subset_1 \\ X1\ (u1_struct_0\ X0))\wedge(m1_subset_1\ X2\ (u1_struct_0\ X0))))\Rightarrow(m1_subset_1 \\ (k6_algstr_0\ X0\ X1\ X2)\ (u1_struct_0\ X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_lattices\ X0)\Rightarrow(((\neg v2_struct_0\ X0)\wedge(v10_lattices \\ X0))\Rightarrow((\neg v2_struct_0\ X0)\wedge((v4_lattices\ X0)\wedge((v5_lattices\ X0)\wedge \\ ((v6_lattices\ X0)\wedge((v7_lattices\ X0)\wedge((v8_lattices\ X0)\wedge(v9_lattices \\ X0)))))))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0)\wedge((v3_group_1\ X0)\wedge((v10_lattices \\ X0)\wedge((v4_lattice3\ X0)\wedge((v7_quantal1\ X0)\wedge((v8_quantal1\ X0)\wedge \\ (l1_quantal1\ X0)))))))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (u1_struct_0 \\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (u1_struct_0\ X0))\Rightarrow(\forall X3. \\ (m1_subset_1\ X3\ (u1_struct_0\ X0))\Rightarrow(\forall X4.(m1_subset_1\ X4 \\ (u1_struct_0\ X0))\Rightarrow(((r3_lattices\ X0\ X1\ X2)\wedge(r3_lattices\ X0\ X3 \\ X4))\Rightarrow(r3_lattices\ X0\ (k6_algstr_0\ X0\ X1\ X3)\ (k6_algstr_0\ X0\ X2\ X4))))))) \end{aligned}$$