

t37_heyting3

(TMGqT4iGuQkAAK5Huj5aacojcC6pBCVnPG3)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k3_yellow_0 : \iota \Rightarrow \iota$ be given. Let $k1_heyting3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r2_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_orders_2 : \iota \Rightarrow o$ be given. Let $k1_yellow_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_yellow_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_substlat : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v3_orders_2 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $k3_lattice3 : \iota \Rightarrow \iota$ be given. Let $v1_orders_2 : \iota \Rightarrow o$ be given. Let $v4_orders_2 : \iota \Rightarrow o$ be given. Let $v3_lattices : \iota \Rightarrow o$ be given. Let $k5_substlat : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_lattice3 : \iota \Rightarrow \iota$ be given. Let $v1_relat_2 : \iota \Rightarrow o$ be given. Let $v4_relat_2 : \iota \Rightarrow o$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_finsub_1 : \iota \Rightarrow \iota$ be given. Let $k4_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_lattices : \iota \Rightarrow \iota$ be given. Let $k3_substlat : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_substlat : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_lattices : \iota \Rightarrow \iota$ be given. Let $k4_substlat : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_orders_2 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1_xboole_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. (l1_orders_2 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((r2_lattice3 X0 k1_xboole_0 X1) \wedge (r1_lattice3 X0 k1_xboole_0 X1))) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v5_orders_2 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(((X1 = k1_yellow_0 \\ & X0 X2) \wedge (r1_yellow_0 X0 X2)) \Rightarrow ((r2_lattice3 X0 X2 X1) \wedge (\forall X3. \\ & (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((r2_lattice3 X0 X2 X3) \Rightarrow (r1_orders_2 \\ & X0 X1 X3)))))) \wedge (((r2_lattice3 X0 X2 X1) \wedge (\forall X3.(m1_subset_1 \\ & X3 (u1_struct_0 X0)) \Rightarrow ((r2_lattice3 X0 X2 X3) \Rightarrow (r1_orders_2 X0 X1 \\ & X3)))))) \Rightarrow ((X1 = k1_yellow_0 X0 X2) \wedge (r1_yellow_0 X0 X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. k1_xboole_0 \in k1_substlat X0 X1 \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (u1_struct_0 \\ & (k1_heyting3 X0 X1))) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 \\ & (k1_heyting3 X0 X1))) \Rightarrow ((r3_orders_2 (k1_heyting3 X0 X1) X2 X3) \Leftrightarrow \\ & (\forall X4. \neg(X4 \in X2) \wedge (\forall X5. \neg(X5 \in X3) \wedge (r1_tarski X5 X4)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v3_orders_2 \\ & X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\ & m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow ((r3_orders_2 X0 X1 X2) \Leftrightarrow (r1_orders_2 \\ & X0 X1 X2)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0))) \Rightarrow (\forall X2. \forall X3. (g1_orders_2 X0 X1 = g1_orders_2 \\ & X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (((\neg v2_struct_0 (k3_lattice3 X0)) \wedge ((v1_orders_2 (k3_lattice3 \\ & X0) \wedge ((v3_orders_2 (k3_lattice3 X0)) \wedge ((v4_orders_2 (k3_lattice3 \\ & X0) \wedge (v5_orders_2 (k3_lattice3 X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. (v3_lattices (k5_substlat X0 X1)) \wedge (v10_lattices (k5_substlat X0 X1)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(v3_orders_2 (k1_heyting3 X0 X1))\wedge((v4_orders_2 (k1_heyting3 X0 X1))\wedge(v5_orders_2 (k1_heyting3 X0 X1))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(\neg v2_struct_0 (k5_substlat X0 X1))\wedge(v3_lattices (k5_substlat X0 X1)) \quad (12)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.(v3_lattices (k5_substlat X0 X1))\wedge(l3_lattices (k5_substlat X0 X1)) \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices \\ X0)))\Rightarrow((v1_partfun1 (k2_lattice3 X0) (u1_struct_0 X0))\wedge((v1_relat_2 \\ (k2_lattice3 X0))\wedge((v4_relat_2 (k2_lattice3 X0))\wedge((v8_relat_2 \\ (k2_lattice3 X0))\wedge(m1_subset_1 (k2_lattice3 X0) (k1_zfmisc_1 \\ (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))))))) \quad (15) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.l1_orders_2 (k1_heyting3 X0 X1) \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v3_lattices X2)\wedge(l3_lattices \\ X2))\Rightarrow((X2 = k5_substlat X0 X1)\Leftrightarrow((u1_struct_0 X2 = k1_substlat X0 \\ X1)\wedge(\forall X3.(m2_subset_1 X3 (k5_finsub_1 (k4_partfun1 X0 \\ X1)) (k1_substlat X0 X1))\Rightarrow(\forall X4.(m2_subset_1 X4 (k5_finsub_1 \\ (k4_partfun1 X0 X1)) (k1_substlat X0 X1))\Rightarrow((k1_binop_1 (u2_lattices \\ X2) X3 X4 = k3_substlat X0 X1 (k2_substlat X0 X1 X3 X4))\wedge(k1_binop_1 \\ (u1_lattices X2) X3 X4 = k3_substlat X0 X1 (k4_substlat X0 X1 X3 X4)))))) \quad (17) \end{aligned}$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices X0)))\Rightarrow(k3_lattice3 X0 = g1_orders_2 (u1_struct_0 X0) (k2_lattice3 X0)) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.k1_heyting3 X0 X1 = k3_lattice3 (k5_substlat X0 X1) \quad (19)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow (k3_yellow_0 X0 = k1_yellow_0 X0 \ k1_xboole_0) \quad (20)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow ((v1_orders_2 X0) \Rightarrow (X0 = g1_orders_2 (u1_struct_0 X0) (u1_orders_2 X0))) \quad (21)$$

Theorem 1

$$\forall X0.(m1_subset_1 X0 \ k5_numbers) \Rightarrow (k3_yellow_0 (k1_heyting3 \ k5_numbers (k6_domain_1 \ k5_numbers X0)) = k1_xboole_0)$$